

**OBESITY WAR:
ARE OUR DIETARY GUIDELINES LOSING**

HEARING

BEFORE THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

SEPTEMBER 30, 2003

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ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

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OBESITY WAR: ARE OUR DIETARY GUIDELINES LOSING

TUESDAY, SEPTEMBER 30, 2003

U.S. SENATE,
SUBCOMMITTEE ON CONSUMER AFFAIRS AND PRODUCT
SAFETY,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:30 p.m. in room 253 of the Russell Senate Office Building, Hon. Peter G. Fitzgerald, Chairman of the Subcommittee, presiding.

OPENING STATEMENT OF HON. PETER G. FITZGERALD, U.S. SENATOR FROM ILLINOIS

Senator FITZGERALD. Good afternoon. I'd like to call this meeting to order. And I'd like to thank our witnesses and our guests for being here at this hearing on the Federal Government's *Dietary Guidelines for Americans*.

In the last two decades, there has been a dramatic surge in the incidence of diabetes and obesity in the United States. According to the Center for Disease Control, the number of persons per million persons with diagnosed diabetes has gone from 5.76 in 1980 to 12.01 in the year 2000.

Similarly, in 1985, according to the CDC, in no state in the union were more than 14 percent of the citizens obese, with obesity being defined as a body mass index greater than or equal to 30 or about 30 pounds overweight for a five foot four inch person.

But by 2001, in all states but Colorado, more than 15 percent of the citizens were obese. And in some of the states now, the population is approaching over 25 percent obesity. In fact, it's getting close to a third of the people in this country being clinically obese.

My own state of Illinois dramatically demonstrates this disturbing trend. According to the CDC, in 1985, less than 10 percent of Illinois residents were obese. By 2001, between 20 and 24 percent of Illinois residents were obese.

In all, close to one-third of Americans are now clinically obese. And nearly 64 percent of all adults are overweight. Moreover, twice as many children and three times as many adolescents are overweight as was the case in 1980 which, incidentally, was the year the Government first published the *Dietary Guidelines for Americans*.

The toll diabetes and obesity are taking on America is enormous. Obesity is now responsible for over 300,000 deaths a year. Diabetes

causes serious life-threatening conditions and painful lifestyle adjustments for those who suffer from it and for their families.

We spend tens of billions a year treating complications from diabetes and obesity, and billions more on research. And yet the trends are all going in the wrong direction. We are losing the battle of the bulge.

In 1992, the USDA first promulgated its now famous *Food Guide Pyramid*. The pyramid strongly encouraged Americans to load up on foods which are high in carbohydrates and high on the glycemic index, foods such as breads, cereals, rice and pasta.

At the same time, the food pyramid discouraged Americans from consuming high protein foods that are low in carbohydrates and low on the glycemic index, foods such as meats, fish, nuts and dairy products.

The purported rationale at the time was to try to get Americans to cut down on their consumption of dietary fats in order to lessen the incidence of heart disease and obesity. Since that time, and taking their cue from the USDA's dietary advice that carbs are good and fats are bad, millions of Americans have gone on low-fat diets. And grocery manufacturers have responded by introducing numerous varieties of fat-free or low-fat foods.

In order to make the foods taste good, many of the processors have added starches and sugars to their low-fat or no-fat products. The result has been that Americans are now eating less fat but more carbohydrates and starches. And as indicated at the outset, Americans are now getting fatter, faster, and at younger ages than ever before.

In recent months, reams of new evidence have begun to pour in that Americans are facing a glycemic overload, and that excessive carbohydrate intake is to blame. In May of this year, the *New England Journal of Medicine* published two studies that suggested that high protein, low carbohydrate diets lead to more and quicker weight loss than low fat, high carbohydrate diets.

Although more research needs to be completed, there is no evidence that the people in the studies who undertook the low carbohydrate diets increased their risk factors for heart disease.

The witnesses we have called today will present a variety of viewpoints. One is an advocate of a low carbohydrate diet. Another is an advocate of a low fat diet. Another will argue sort of a middle ground and suggest that some fats are healthy and others are not, and that some carbohydrates are healthy, and others are not.

To a certain extent, all will agree that the current food pyramid could be made much better. There seems to be general agreement that the food pyramid's simplistic message that carbs are good and fats are bad is troublesome and misleading.

The Federal Government revises its *Dietary Guidelines for Americans* every 5 years. Now, as an Advisory Committee is meeting to make recommendations for the 2005 revisions, we have an obligation to ask a painful but obvious question. Is there a link between our ever expanding waistlines and the Government's own *Dietary Guidelines*.

My own view is that there is such a link. The USDA food pyramid probably has more to do with diabetes and obesity than Krispy Kremes. In fact, the pyramid's advice to load up with six

to eleven helpings of high carbohydrate foods a day does more to promote the interest of grain and sugar producers than to promote the good health of ordinary Americans.

Moreover, while I respect the many hardworking public servants in the USDA, I think it's the wrong agency to be giving us dietary advice. The primary mission of the USDA is, after all, to promote the sale of agricultural products. So putting the USDA in charge of dietary advice is in some respects like putting the fox in charge of the hen house.

Under current practice, both the USDA and the Health and Human Services Department have a role in developing the *Dietary Guidelines*. The lead agency role in rewriting the *Guidelines* now rotates between the two agencies.

For example, USDA was the lead agency in rewriting the 2000 dietary guidelines. And currently HHS is serving as the lead agency for the 2005 guidelines.

As recommended by one of the witnesses on the second panel, Dr. Willett, I believe that instead of the USDA and HHS jointly writing the guidelines, the HHS should alone write them. In my judgment, the HHS is less likely to be cozy with farm groups and the food companies. And it has access to one of the world's best sources of health research, the National Institutes of Health.

Accordingly, after this hearing, I plan to introduce legislation that would remove the USDA as the General in our war on obesity, and replace it with the HHS. While it's true that special interests influence virtually all policies coming out of Washington, in most cases the American public is cheated only in economic terms.

In the case of the *Dietary Guidelines for Americans*, however, there is the potential that citizens could be cheated out of advice that would protect their health and their lives. In revising the *Dietary Guidelines*, therefore, we need to make a special effort to ensure that unbiased science, not politics, triumphs; and that consumers' interests prevail over private economic interests.

Nothing less than the health and well-being of all Americans, young and old, is at stake. And with that, I'd like to invite our first panel to come up to the witness table. And I would like to introduce the witnesses from my left to my right.

First, we have Dr. Eric Hentges, Executive Director of the Center for Nutrition Policy and Promotion, Food, Nutrition, and Consumer Services at the U.S. Department of Agriculture; Dr. Arthur Lawrence, Assistant Surgeon General and Acting Principal Deputy Assistant for Health and Human Services; and Dr. John D. Graham, Administrator, Executive Office of the President, Office of Management and Budget.

And I'd like to thank all of you for being here. We have copies of all of your written statements, I believe. And we would encourage you to the best you are able to, rather than reading your opening statements, if you could summarize them in a brief 5-minute or so opening remarks, and we will be happy to include your full statements in the record. Dr. Hentges, welcome.

Dr. HENTGES. Thank you. Thank you, Mr. Chairman.

Senator FITZGERALD. If you could pull that microphone closer to you. They are not very sensitive, so you have got to have them right up to your mouth. Thank you.

**STATEMENT OF DR. ERIC HENTGES, EXECUTIVE DIRECTOR,
CENTER FOR NUTRITION POLICY AND PROMOTION, FOOD,
NUTRITION, AND CONSUMER SERVICES, U.S. DEPARTMENT
OF AGRICULTURE**

Dr. HENTGES. Thank you, Mr. Chairman. I am Eric Hentges. And I am the Executive Director of the U.S. Department of Agriculture's Center for Nutrition, Policy and Promotion. I'm pleased to be here to describe the status of the process that USDA and the Department of Health and Human Services have jointly undertaken to review and publish the *Dietary Guidelines for Americans*.

It is of great importance to this administration to provide current, accurate and consistent messages to the American public on diet and nutrition. We are committed to improving the health of Americans in fighting the growing obesity epidemic.

The challenge of obesity did not occur overnight, and it will not go away overnight. And we cannot solve it alone. To this end, the President has launched his Healthier U.S. initiative, which consists of four key strategies. Two of these strategies are directly addressed by the *Dietary Guidelines*, and that is eat a nutritious diet and be physically active every day.

The *Dietary Guidelines* serve multiple purposes. First and foremost, though, they do form the basis for Federal nutrition policy. They set standards for nutrition and food assistance programs. They guide nutrition education programs. They provide dietary advice to consumers. And also they serve as the vehicle whereby Federal agencies speak with one voice on nutrition issues for the health of Americans.

The mandate to the *Guidelines*, as you've noted, is in the National Nutrition Policy and Related Research Act of 1990. The Act requires the Secretaries to jointly publish the *Dietary Guidelines for Americans* at least every 5 years.

The departments are modeling the 2005 *Dietary Guidelines* development process after those used to prepare the previous editions. The Secretaries chose to use the Federal Advisory Committee Act process to establish the advisory panel.

Regarding the Committee's selection, as in previous years, the USDA and HHS announced its intention to establish the panel through a Federal Register notice. This was on May 15 of this year.

The solicitations of nominees is an open, public process. A 13-member committee has been appointed to review the 2000 edition of the *Guidelines* and determine if revisions are warranted. Members of the Committee are recognized experts in their field, and collectively represent the scientific knowledge, the current scientific knowledge, of nutrition and health.

Members reflect race, gender and geographic diversity. The Committee's duties are solely advisory and time limited. According to the charter that established the committees, their duties are as follows: If the Committee decides that no changes are necessary, the Committee will inform the Secretaries, and this will terminate the Committee.

If the Committee decides that changes are warranted based on the preponderance of scientific and medical knowledge, the Committee will determine what issues for change need to be addressed.

The focus of the Committee should be on the review of new scientific evidence. The Committee shall make and submit its technical recommendations and the rationale for these recommendations in a report to the Secretaries. The Committee's focus should be on these recommendations and the supporting science rather than translating the recommendations into a communications document.

Upon the submittal of the Committee's recommendations, the Dietary Guidelines Advisory Committee will be terminated. The first meeting of this committee occurred on September 23 and 24 of this year. At the conclusion of that meeting, the members unanimously decided to proceed with the comprehensive review of the science in order to develop the recommendations.

The Advisory Committee's expected to hold four public meetings. All the meetings will be announced in the Federal Register. And it will be open to the public. There will be opportunity for both oral and written testimony to the Committee, and the minutes of each meeting will be posted on the internet.

Once the Committee has completed its deliberations, the Advisory Committee will submit its report to the Secretaries by June 2004. The departments will independently review the Committee's recommendation. Subsequent to that review, the two departments will collaborate to publish the official 2005 *Nutrition and Your Health: Dietary Guidelines for Americans*.

In conclusion, Mr. Chairman, I appreciate the Committee's interest, your interest, in nutrition and its critical role in an overall healthy lifestyle for Americans. This concludes my comments. Thank you, sir.

Senator FITZGERALD. Thank you. Dr. Lawrence.

[The prepared statement of Dr. Hentges follows:]

PREPARED STATEMENT OF ERIC HENTGES, EXECUTIVE DIRECTOR, CENTER FOR NUTRITION POLICY AND PROMOTION, FOOD, NUTRITION, AND CONSUMER SERVICES, U.S. DEPARTMENT OF AGRICULTURE

Thank you, Mr. Chairman. I am Eric Hentges, Executive Director of the Center for Nutrition Policy and Promotion (CNPP) at the U.S. Department of Agriculture (USDA). I am pleased to be here today to describe the status of the process that USDA and the Department of Health and Human Services (HHS) have jointly undertaken to review and publish the *Dietary Guidelines for Americans*.

Providing current, accurate, and consistent messages to the American people on diet and nutrition is of great importance to this Administration. We are committed to improving the health of Americans and fighting the growing obesity epidemic. The challenge of obesity did not appear overnight; it will not be solved overnight, and we cannot solve it alone. But our responsibilities to promote the Nation's health demand action now. To that end, the President launched his *HealthierUS* initiative, which consists of four key strategies. The Dietary Guidelines directly support two of them, specifically, eat a nutritious diet and be physically active each day.

The *Dietary Guidelines* provide the basis for Federal nutrition policy. Specifically, the Guidelines provide advice for healthy Americans, over the age of two, about food choices that promote health and quality of life, as well as prevent disease. The Dietary Guidelines serve multiple purposes: they form Federal nutrition policy; set standards for food and nutrition assistance programs; guide nutrition education programs; and provide dietary advice to consumers. They also serve as the vehicle for the Federal government to speak with "one voice" on nutrition issues for the health of the American public.

The mandate for the Dietary Guidelines is the *National Nutrition Monitoring and Related Research Act of 1990* (7 U.S.C. 5341), which requires the Secretaries of Agriculture and Health and Human Services to jointly publish the *Dietary Guidelines for Americans* at least every five years. The Guidelines must: (1) contain nutritional

and dietary information and guidelines for the general public; (2) be based on the preponderance of current scientific and medical knowledge; and (3) be promoted by each Federal agency in carrying out any Federal food, nutrition, or health program. USDA and HHS issued the Dietary Guidelines voluntarily in 1980, 1985, and 1990. The 1995 edition was the first statutorily mandated report.

The Departments are modeling the 2005 *Dietary Guidelines* development process after those used to prepare the previous editions. Following this precedent, the Secretaries chose to use the Federal Advisory Committee Act (FACA) process to establish an advisory panel. A 13-member Dietary Guidelines Advisory Committee (DGAC) has been appointed to review the 2000 edition of the *Guidelines* and recommend if, on the basis of current scientific and medical knowledge, revisions are warranted.

Also as in previous years, USDA and HHS announced their intention to establish the Advisory Committee in the *Federal Register* on May 15, 2003. This notice requested nominations from the public for Committee membership. The solicitation of nominees was an open, public process. The Advisory Committee members are recognized experts in their fields and collectively represent the current scientific knowledge in nutrition and health with expertise across a broad spectrum of specialty areas. The membership reflects race, gender and geographic diversity. The Secretaries of USDA and HHS jointly appointed the DGAC members and chairperson. (Committee member list attached)

The Committee's duties are solely advisory and time-limited. According to the Charter that established this Committee, its duties are as follows:

- If the Committee decides that no changes are necessary, the Committee will so inform the Secretaries of USDA and HHS. This action will terminate the DGAC.
- If the Committee advises that changes are warranted, based on the preponderance of the scientific and medical knowledge, the Committee will specify which issues for change need to be addressed.
- The focus of the Committee should be on the review of the new scientific evidence.
- The Committee shall make and submit its technical recommendations and the rationale for these recommendations in a report to the Secretaries. The Committee's focus should be its recommendations and the supporting science rather than translating the recommendations into a communication document.
- Upon the submittal of the Committee's recommendations, the DGAC will be terminated.

The first meeting of the 2005 DGAC occurred on September 23–24, 2003. At the conclusion of the meeting, the members unanimously decided to proceed with a comprehensive review of the science in order to develop their recommendations.

The 2005 DGAC is expected to hold three additional public meetings. All meetings will be announced in the *Federal Register* and will be open to the public. There will be an opportunity for oral and written testimony to be provided to the Committee. Meeting minutes will be posted on the Internet. Once it has completed its deliberations, the Advisory Committee will submit its report to the Secretaries by June 2004. At that time the Departments will independently review the Committee's recommendations for changes to the guidelines. Subsequent to that review, the two Departments will collaborate to publish the official 2005 *Nutrition and Your Health: Dietary Guidelines for Americans*.

Conclusion

Mr. Chairman, I appreciate this Committee's interest in nutrition and its critical role in an overall healthy lifestyle for all Americans. As we prepare to revise the Dietary Guidelines, we are mindful of the critical contribution they make to life-long eating habits and good health. But, the Federal government cannot do this job alone. Meeting this challenge requires input from all of the Guidelines' many stakeholders.

This concludes my prepared remarks. I would be happy to answer any questions you might have at this time.

ATTACHMENT

Dietary Guidelines Advisory Committee

Lawrence J. Appel, M.D., M.P.H., *Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD.* Dr. Appel is a physician and clinical researcher who has conducted several studies on the impact of nutrition and lifestyle modification on blood pressure and cardiovascular risk. Currently, he serves on the Nutrition Committee of the American Heart Association, and is currently serving as Chair to the Institute of Medicine's study on electrolytes and water.

Yvonne Bronner, Sc.D., R.D., L.D., *Professor and Director of MPH/DrPH Program, Morgan State University, Baltimore, MD.* Dr. Bronner has more than 20 years of experience in research, training, and program development in the areas of nutrition and maternal and child health. She serves on numerous advisory committees such as the Institute of Medicine's Food and Nutrition Board and the Department of Health and Human Services Maternal and Child Health Review Panel.

Benjamin Caballero, M.D., Ph.D., *Director and Professor of the Center for Human Nutrition and Division of Human Nutrition, Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.* Dr. Caballero is an internationally recognized expert in pediatric nutrition whose focus includes childhood obesity and amino acid and protein metabolism. He has served on a number of expert advisory panels, including the recent Institute of Medicine's Panel on Dietary Reference Intakes on Macronutrients.

Carlos Arturo Camargo, Jr., M.D., Dr.P.H., *Assistant Professor of Medicine, Harvard Medical School; Assistant Professor of Epidemiology, Harvard School of Public Health, Boston, Massachusetts.* For the past 17 years, Dr. Camargo has conducted research on the health effects of moderate alcohol consumption, primarily the "protective" association between moderate drinking and the risk of cardiovascular diseases. His recent work has been based on several large epidemiologic cohorts, including the Physicians' Health Study, the Nurses' Health Study, and the Health Professionals' Follow-up Study.

Fergus M. Clydesdale, Ph.D., *Distinguished Professor of Food Science and Head of the Department of Food Science, University of Massachusetts, Amherst, Mass.* Dr. Clydesdale's research interests include physical-chemical changes in food during processing, mineral-fiber interactions in foods, and technological optimization of physiological and functional properties and color-sensory interactions in foods. He has served on numerous committees, including the FDA Food Advisory Committee and the Institute of Medicine's Food and Nutrition Board.

Vay Liang W. Go, M.D., *Professor of Medicine, University of California at Los Angeles (UCLA) School of Medicine.* Dr. Go is an international authority on the brain-gut connection in nutrition, especially with regard to gut hormones. He is currently editor of the journal *Pancreas*. He is the former director of Nutrition at the NIH's National Institute of Diabetes, Digestive and Kidney Diseases, the former Executive Chair of Medicine at UCLA, and a consultant to the Food and Drug Administration in nutrition. Dr. Go has served as Core Director at the UCLA Center for Dietary Supplements Research: Botanicals, and as Associate Director of the UCLA Center for Human Nutrition. Dr. Go continues to be the Associate Director of the NCI-funded Clinical Nutrition Research Unit, located at the UCLA Center for Human Nutrition.

Janet C. King, Ph.D., R.D., *Senior Scientist, Children's Hospital Oakland Research Institute, Oakland, Calif.; Professor Emerita, Department of Nutritional Sciences and Toxicology, University of California at Berkeley, Calif.; Adjunct Professor, Department of Nutrition and the Department of Internal Medicine; University of California at Davis, Calif.* Dr. King has published extensively and is internationally recognized for her research on energy and zinc metabolism in healthy adults and pregnant women. Dr. King was chair of the Food and Nutrition Board in 1994 when the paradigm for the new Dietary Reference Intakes was established. She served as director of the USDA Western Human Nutrition Research Center for eight years.

Penny M. Kris-Etherton, Ph.D., R.D., *Distinguished Professor of Nutrition, Pennsylvania State University, University Park, Penn.* Dr. Kris-Etherton has expertise in the area of diet and coronary heart disease risk factors, as well as nutritional regulation of lipoprotein and cholesterol metabolism. She is a member of the Institute of Medicine's Panel on Dietary Reference Intakes for Macronutrients.

Joanne R. Lupton, Ph.D., *Regents Professor, University Faculty Fellow and William W. Allen Endowed Chair in Human Nutrition, Texas A&M University, College*

Station, Texas. Dr. Lupton has conducted research on the effect of diet, primarily the consumption of fats and fiber, on the development of colon cancer. Dr. Lupton has served as chair of the recently released Macronutrient Report from the Dietary Reference Intakes Committee of the National Academy of Sciences and is the chair for the National Academy of Science panel to determine the definition of dietary fiber.

Joanne R. Lupton, Ph.D., *Professor of Animal Science, of Food Science and Technology, of Nutritional Sciences, and of Veterinary Anatomy and Public Health, Texas A&M University, College Station, Texas.* Dr. Lupton has conducted research on the effect of diet, primarily the consumption of fats and fiber, on the development of colon cancer. Dr. Lupton has served as chair of the recently released Macronutrient Report from the Dietary Reference Intakes Committee of the National Academy of Sciences and is the chair for the National Academy of Science panel to determine the definition of dietary fiber.

Theresa A. Nicklas, Dr.P.H., M.P.H., L.N., *Professor of Pediatrics, Department of Pediatrics, Children's Nutrition Research Center, Baylor College of Medicine, Houston, Texas.* Dr. Nicklas' expertise pertains to cardiovascular health and nutritional epidemiology, child nutrition, and health promotion and chronic disease prevention. Her current work examines eating patterns of children as predictive factors for obesity in young adulthood. She was a member of the Dietary Patterns Advisory Panel of the National Heart, Lung, and Blood Institute's National Growth and Health Study.

Russell R. Pate, Ph.D., *Associate Dean for Research, School of Public Health, and Professor, Department of Exercise Science, University of South Carolina, Columbia, S.C.* Dr. Pate is widely recognized for his expertise in physical activity and physical fitness in children, and the overall health implications of physical activity. He coordinated the effort that led to the development of the recommendation on Physical Activity and Public Health by the Centers for Disease Control and Prevention and the American College of Sports Medicine. He currently serves on an Institute of Medicine panel that is developing guidelines on prevention of childhood obesity.

F. Xavier Pi-Sunyer, M.D., M.P.H., *Director, Obesity Research Center, Professor of Medicine, Columbia University College of Physicians and Surgeons; Chief, Division of Endocrinology, Diabetes, and Nutrition, St.Luke's-Roosevelt Hospital, New York, N.Y.* Dr. Pi-Sunyer is an international expert in obesity and diabetes, focusing on the role of nutrition in the prevention and treatment of these increasingly prevalent diseases. He was invited to give a presentation to the 2000 Dietary Guidelines Advisory Committee on the topic of glycemic index and has served on expert panels and advisory panels to several NIH Workshops and to the National Academy of Sciences Food and Nutrition Board.

Connie M. Weaver, Ph.D., *Head and Distinguished Professor, Department of Foods and Nutrition, Purdue University, West Lafayette, Ind.* Dr. Weaver is a leader in the nutrition community, having served as President of the American Society for Nutritional Sciences and in a number of leadership roles for the Institute of Food Technologists. She has also served on the National Academy of Sciences' Food and Nutrition Board as a panel member for the Dietary Reference Intakes for Calcium and Related Nutrients and as a committee member to the National Academy of Sciences for Food Chemical Codex.

**STATEMENT OF ARTHUR LAWRENCE, Ph.D., ACTING
PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR HEALTH,
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**

Dr. LAWRENCE. Thank you, Mr. Chairman. Good afternoon. Pleased to be here.

My name is Arthur Lawrence, and I serve as Assistant Surgeon General and the Acting Principal Deputy Assistant Secretary for Health at the Department of Health and Human Services. And I appreciate the opportunity to speak with you today.

Most Americans make choices about what to eat throughout the day, every day. Making healthy food choices for themselves and their families is key to Americans' overall health and well-being.

That's why the *Dietary Guidelines for Americans* were developed in 1980 and remain so important today.

The *Dietary Guidelines* form the scientific and the medical basis for healthy food recommendations. Because many diseases and conditions are preventable when Americans adopt and maintain healthy lifestyles, HHS Secretary Tommy Thompson is passionate about making sure that Americans have access to science-based information about diet and nutrition in understandable formats.

Today I will highlight nutrition habits of Americans, provide a brief history of the *Dietary Guidelines*, and illustrate the importance of scientific consensus in the ongoing effectiveness of health and nutrition programs.

Let me start with dietary trends. Based upon scientific evidence, we know that a diet that, first, includes a variety of fruits, vegetables and grains; second, that is moderate in sugars, salt and total fat; and, third, that is low in saturated fat and cholesterol, constitute a diet that promotes health and helps prevent disease.

Unfortunately, few Americans are meeting the National objectives for fruit, vegetable and grain intake. And most Americans' diets exceed saturated fat recommendations. In addition, more than half of all Americans are not meeting objectives for physical activity.

Over the past two decades, the prevalence of overweight and obesity, as you have said, sir, has increased. This is a serious problem when you consider that four of our country's leading killers, heart disease, cancer, diabetes and stroke, are all linked to poor diet and inadequate physical activity. Over 60 percent of American adults are overweight or obese, and 15 percent of our children and adolescents are overweight.

According to the results of a recent survey conducted by the CDC, more than two-thirds of American adults are trying to lose weight or keep from gaining weight. But many do not follow guidelines recommending a combination of fewer calories plus more physical activities.

Let me say a few words about the history of the *Dietary Guidelines*. Clearly, we must continue evaluating current science and make sure that we are translating it into messages that Americans can understand and apply to how they shop for food and how they eat. It is a very dynamic process.

Some very positive progress has been made. For example, more people are reading food labels. And consumption of fruits and vegetables has significantly increased over the past decade.

The *Dietary Guidelines for Americans* are a reflection of the current scientific and medical knowledge and are therefore continuously and vigorously reviewed. The *Guidelines* are jointly developed by the Department of Health and Human Services, and the United States Department of Agriculture. They have been issued every 5 years since 1980.

It was in 1977, after years of discussion and scientific review, that the Senate Select Committee on Nutrition and Human Needs recommended dietary goals for the American people. The dietary goals were met with a great deal of controversy from industry groups as well as the scientific community.

To support the credibility of the science utilized by the Committee, the Department of Agriculture and the Department of Health, Education and Welfare, the predecessor agency to our current HHS, assembled scientists from the two departments and from throughout the Nation.

From these efforts, the first *Dietary Guidelines for Americans* were issued in 1980. Congress then directed the two departments to convene a Dietary Guidelines Advisory Committee to assure that a broad-based perspective was formally solicited.

The Advisory Committee assisted in preparing the 1990, the 1995, and the 2000 versions of the *Guidelines*. A new committee has been jointly appointed by HHS and USDA for each edition.

HHS and USDA have begun the process of developing the 2005 edition for which HHS has the lead for chartering the Advisory Committee. The HHS USDA Dietary Guidelines Advisory Committee that will assist our departments in preparing the 2005 edition held its first meeting last week.

The Committee members are recognized experts in human nutrition and physical activity, and have demonstrated their commitment to the public's health and well-being. After preliminary discussions of key recent developments in nutrition and physical activity, they concluded that further review of the scientific literature is necessary.

They began to chart the course of their deliberations, and are committed to the transparent evidence-based review that will guide their recommendations to the Secretaries of the respective departments.

All federally-issued dietary guidance is required to be consistent with the *Guidelines*. For example, the *Guidelines* serve as the basis of numerous physical activity and nutrition campaigns throughout HHS. Highlights include the National Cancer Institute's 5–9 A Day for Better Health; the National Heart, Lung and Blood Institute's Cooking the Heart Healthy Way Recipes and Interactive Menu Planner; the National Institute of Diabetes and Digestive and Kidney Diseases' Take Charge of Your Health: A Teenager's Guide to Better Health, which encourages teenagers to take charge of their health by eating better and by being more physically active; and finally, the CDC's National Bone Health Campaign, called Powerful Bones, Powerful Girls, which promotes optimal bone health among girls aged 9 to 12 years in an effort to reduce their risk of osteoporosis in later life.

The *Guidelines* are also used to develop nutrition policies and guidelines. The Food and Drug Administration uses the guidelines to address food labeling policies. And the *Guidelines* serve as the basis for national health objectives for nutrition and physical activity as outlined in *Healthy People 2010*.

Mr. Chairman, in closing, I will add that at HHS we are working closely with other departments and agencies as well as with partners in academia, communities, foundations and business groups throughout the Nation to educate Americans about healthy choices and physical activity.

As you know, the epidemic of overweight and obesity led President Bush to launch the Healthier U.S. initiative. Healthier U.S. identifies four key pillars to improve and maintain health. First, be

physically active each day. Second, eat a nutritious diet. Third, get preventive screenings. Fourth, make healthy choices.

As part of Healthier U.S., the President announced two new Executive Orders that direct key Federal departments and agencies to develop plans to promote fitness and health. In response, Secretary Thompson created steps to a Healthier U.S., and directed HHS agencies to make prevention of chronic illnesses and diseases a top priority.

Secretary Thompson is committed to advancing the goals of Healthier U.S. by giving the public and policymakers clear, scientifically proven information. The Steps grants program is the centerpiece of this initiative.

Last week, Secretary Thompson announced the four states, seven cities and one tribal council that were awarded the Steps grant based on their exemplary application. The messages in the *Dietary Guidelines* will be used to promote healthy eating, physical activity in these communities.

Additionally, the Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity concludes that a healthy diet and regular physical activity are consistent with the *Dietary Guidelines* and should be the cornerstone of any prevention or treatment effort. These are examples of how the *Dietary Guidelines* serve as the framework for many Federal nutrition programs, policies and initiatives.

Mr. Chairman, distinguished guests, thank you very much for the opportunity to speak with you today about the *Dietary Guidelines for Americans*. And I will be happy to answer any questions you may have, sir.

Senator FITZGERALD. Thank you, Dr. Lawrence. Dr. Graham.
[The prepared statement of Dr. Lawrence follows:]

PREPARED STATEMENT OF ARTHUR LAWRENCE, PH.D., ACTING PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR HEALTH, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Good afternoon, Mr. Chairman and distinguished members of the Subcommittee. My name is Dr. Arthur Lawrence, and I serve as Assistant Surgeon General and Acting Principal Deputy Assistant Secretary for Health. My professional background is clinical pharmacy and pharmacology. Thank you for the opportunity to speak with you today.

Most Americans make choices about what to eat throughout the day, every day. Making healthy food choices for themselves and their families is key to Americans' overall health and well-being, and essential to reducing risk of long-term diseases and conditions. That is why the *Dietary Guidelines for Americans* were developed in 1980 and are so important today.

The *Dietary Guidelines for Americans* form the scientific and medical basis of what Americans need to understand to make healthy eating choices. So many diseases and conditions are preventable when Americans adopt and maintain healthy lifestyles. That is why HHS Secretary Tommy G. Thompson is passionate about making sure that Americans have access to science-based information about diet and nutrition in understandable formats.

Today I will highlight dieting patterns and nutrition habits of Americans, provide a brief history of the *Dietary Guidelines*, and illustrate the importance of scientific consensus in the ongoing effectiveness of HHS health and nutrition programs.

Dietary Trends

A healthy diet is balanced and includes all major food groups. Based upon the best scientific evidence available, we know that a diet that includes a variety of fruits, vegetables, and grains, especially whole grains; is moderate in sugars, salt, and total fat; and is low in saturated fat and cholesterol is a diet that promotes

health and helps prevent disease. Total calories consumed must be balanced with physical activity to maintain a healthy weight. And, food must be kept safe to eat in order to provide nourishment and avoid food-borne illness.

Unfortunately, few Americans are meeting the national consensus objectives presented in *Healthy People 2010* for fruit, vegetable, and grain intake, and most Americans' diets exceed saturated fat recommendations. Yet, according to a National Cancer Institute Survey, these problems are not primarily due to a lack of "awareness"—as awareness of the need to eat five or more servings of fruits and vegetables per day has nearly tripled since 1991.

More than half of all Americans are not meeting objectives for physical activity. The prevalence of overweight and obesity has increased. Over 60 percent of American adults are overweight or obese and 15 percent of our children and adolescents are overweight. Four of our country's leading killers—heart disease, some cancers, diabetes, and stroke—are linked to poor diet and inadequate physical activity. More than 300,000 deaths each year are linked to poor diet and inadequate activity patterns.

Americans spend \$33 billion a year on weight-loss products and services. According to a 1999 survey conducted by the Centers for Disease Control and Prevention, more than two-thirds of American adults are trying to lose weight or keep from gaining weight, but many do not follow guidelines recommending a combination of fewer calories and more physical activity. Only 15 percent of Americans have received advice from a doctor or health professional about their weight.

Although these statistics are of great concern, progress has been made. More people are reading food labels. Over the past decade, consumption of fruits and vegetables has increased and saturated fat consumption has decreased. Although reversing the trends in overweight and obesity will require change at the societal and environmental levels, as well as at the individual level, efforts to educate and to promote behavioral change at the individual level must continue.

History of the *Dietary Guidelines*

Assuring a continuing evaluation of the current science and translating that science into messages that Americans can understand and apply is essential, and it's a dynamic process. The *Guidelines* are a reflection of the current preponderance of the scientific and medical knowledge, and therefore must be continuously and vigorously reviewed.

The *Dietary Guidelines for Americans* are jointly developed by the Department of Health and Human Services (HHS) and the United States Department of Agriculture (USDA). The *Guidelines* have been issued every five years since 1980. The current edition focuses on three principles: Aim for fitness, Build a healthy base, and Choose sensibly.

HHS and USDA have begun the process of developing the sixth edition, which will be published in 2005. For the 2005 edition, HHS has the lead for chartering the advisory committee. The goals of this edition of *Dietary Guidelines* are the same—to promote health and reduce disease risk for Americans based upon state-of-the-art scientific evidence.

Early nutrition policy in the United States focused on preventing nutritional deficiencies such as iron deficiency anemia and hunger. Throughout the 1970s, as deficiency diseases became less common, there was growing recognition of the role of excesses and imbalances of certain dietary components related to disease risk and the occurrence of chronic diseases.

In 1977, after years of discussion, scientific review, and debate, the Senate Select Committee on Nutrition and Human Needs recommended what they viewed as Dietary Goals for the American people. The issuance of the Dietary Goals by Congress was met with a great deal of debate and controversy—both from industry groups and from the scientific community. These groups questioned the scientific support for the specificity of the quantitative aspects of the Dietary Goals.

To support the credibility of the science utilized by the Committee, the U.S. Department of Agriculture and the Department of Health, Education and Welfare assembled scientists from the two departments and from throughout the Nation. In February of 1980 the *Dietary Guidelines for Americans* were issued. They represented the best scientific perspective at that point in time. However, the debate continued about the scientific evidence used to support the *Dietary Guidelines*. This led to Congressional report language directing the two departments to convene a *Dietary Guidelines* Advisory Committee to assure that a broad based perspective across the continuum was formally solicited.

Since 1985, external science advisory committees composed of food and nutrition experts from outside of government have been relied upon to provide expert and objective scientific assessment of the need to revise the *Dietary Guidelines for Ameri-*

cans and to propose suggested changes for departmental consideration based upon new scientific findings. Since the issuance of the 1985 *Dietary Guidelines*, much less debate over the scientific basis for the guidelines has ensued either from industry or the scientific community.

In recognition of the fact that nutritional science evolves, in 1990 Congress formally directed HHS and USDA to issue these guidelines every five years (Public Law 101-445).

The *Dietary Guidelines* Advisory Committee was established to assist in the preparations of the 1990, 1995, 2000, and now 2005 versions of the *Dietary Guidelines*. A new Committee has been jointly appointed by HHS and USDA for each edition.

Dietary Guidelines Framework for HHS Programs

The information contained in the *Dietary Guidelines for Americans* report is based on the current preponderance of the scientific and medical knowledge. Thus, in two decades, the *Dietary Guidelines for Americans* have moved with only minor changes from a contentious document to one that represents broad scientific consensus and provides the statutory basis of Federal nutrition programs, policies, and education efforts. These changes reflect the growing emphasis on health promotion and reducing disease risk.

The *Dietary Guidelines* serve as a framework for many Federal initiatives. Amidst multiple messages that are confusing to the public, the *Dietary Guidelines for Americans* provide a vehicle for the government to speak with one clear voice. All Federally issued dietary guidance for the general public is required to be consistent with the *Guidelines*. For example, the *Dietary Guidelines for Americans* serve as the basis of numerous physical activity and nutrition campaigns throughout HHS. Highlights include:

- NIH's National Cancer Institute's *5-9 A Day for Better Health*, a campaign to increase the average consumption of fruits and vegetables to at least 5 daily servings;
- NIH's National Heart, Lung, and Blood Institute's *Cooking the Heart Healthy Way* Recipes and Interactive Menu Planner, which are tools for consumers to meet the nutrition goals of the guidelines;
- NIH's National Heart, Lung, and Blood Institute's *Red Dress Project*, designed to raise awareness that heart disease is the #1 killer of women and provide tools for women to reduce their risk of heart disease;
- NIH's National Institute of Child Health and Human Development's *Milk Matters*, a nationwide campaign dedicated to increasing calcium consumption among America's children and teens;
- NIH's National Institute of Diabetes and Digestive and Kidney Diseases' *Take Charge of Your Health: A Teenager's Guide to Better Health* that encourages teenagers to take charge of their health by eating better and being more physically active; and
- The Centers for Disease Control and Prevention's National Bone Health Campaign, *Powerful Bones, Powerful Girls*, which promotes optimal bone health among girls aged 9-12 years in an effort to reduce their risk of osteoporosis later in life.

The *Dietary Guidelines* are also used to develop nutrition policies and guidelines. The Food and Drug Administration uses the *Dietary Guidelines* to address food-labeling policies. The *Dietary Guidelines for Americans* serve as the basis for the national health objectives, as outlined in Healthy People 2010, for nutrition and physical activity. The *Dietary Guidelines for Americans* influence dietary and physical activity variables measured in the National Health and Nutrition Examination Survey (NHANES), a survey conducted by the National Center for Health Statistics of the Centers for Disease Control and Prevention. This survey collects information about the health and diet of people in the United States.

Conclusion

The *HHS-USDA Dietary Guidelines* Advisory Committee that will assist our Departments to prepare the 2005 edition of the *Dietary Guidelines* held its first meeting last week. The members of this committee are recognized experts in human nutrition and physical activity and have demonstrated their commitment to the public's health and well-being. After preliminary discussions of key recent developments in nutrition and physical activity they concluded that further review of the scientific literature is needed. They began to chart the course of their deliberations for the next several months. We know that scientific results may vary, sometimes seem counter-intuitive and are rarely clear enough to speak for themselves. That

is why the experts we have enlisted are focused on a transparent, evidence-based review that will guide their recommendations to the Secretaries of the Departments.

The epidemic of overweight and obesity led President Bush to launch a *HealthierUS* initiative in June 2002, based on the premise that increasing personal fitness leads to the improved health of our Nation. *HealthierUS* has identified four key dimensions: be physically active each day; eat a nutritious diet; get preventive screenings; and make healthy choices. As part of *HealthierUS*, the President announced two new Executive Orders that direct key Federal departments and agencies to develop plans to better promote fitness and health for all Americans.

In response to that directive, HHS created *Steps to a HealthierUS*, directing all agencies within HHS to make prevention of chronic disease a top priority. Secretary Thompson is committed to advancing the goals of *HealthierUS* by giving the public and policy makers clear, scientifically proven steps to embrace prevention. While the primary goal of the *Steps to a HealthierUS* initiative is to help Americans realize that even small steps can make a dramatic difference in good health, HHS is committed to specific goals to prevent diabetes, obesity, and asthma through this Department-wide initiative. *Steps to a HealthierUS* will achieve these outcomes by improving nutrition, increasing physical activity, and preventing tobacco use and exposure. The *Steps* grants program is the centerpiece of this initiative. Last week, Secretary Thompson announced the four states, seven cities, and one tribal council that were awarded these grants. The messages in the *Dietary Guidelines for Americans* will be used to promote healthy eating and physical activity in these communities.

Additionally, the *Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity* concludes that a healthy diet and regular physical activity, consistent with the *Dietary Guidelines for Americans*, should be promoted as the cornerstone of any prevention or treatment effort.

These are all examples of how the *Dietary Guidelines* serve as the framework for many Federal nutrition programs, policies, and initiatives.

Mr. Chairman and distinguished members of the subcommittee, thank you for the opportunity to discuss the importance of the *Dietary Guidelines* for Americans.

**STATEMENT OF JOHN D. GRAHAM, Ph.D., ADMINISTRATOR,
OFFICE OF INFORMATION AND REGULATORY AFFAIRS,
OFFICE OF MANAGEMENT AND BUDGET, EXECUTIVE OFFICE
OF THE PRESIDENT OF THE UNITED STATES**

Dr. GRAHAM. Thank you very much, Senator, for the opportunity to be here. It's a little unusual for an OMB official to be testifying before this particular committee, and we appreciate the outreach and the opportunity.

This area of *Dietary Guidelines* and the *Food Guide Pyramid* has long been of interest to me personally. Prior to joining the Administration, I served on the faculty of the Harvard School of Public Health for 17 years, where I founded the Harvard Center for Risk Analysis. And in that capacity, I learned about the powerful role that dietary choices play in determining how long people live and how healthy their lives are.

In this capacity, I also learned from one of my faculty colleagues, Professor Walt Willett, who I'm very proud is here today; and you are going to hear from a real expert later in this hearing. And I want to recognize not only Professor Willett, but the tremendous cadre of postdoctoral fellows, junior faculty members, doctoral students who have worked with him over the last decade, and more, producing a lot of the science that's going to be deliberated on in the process you have heard about from the last two witnesses.

When I came to OMB, I saw the area of information to consumers about food as one of the key areas for the administration to make progress on, helping market forces drive toward healthier offerings of food to the American people. One of my first actions at OMB was to issue a prompt letter to the Food and Drug Adminis-

tration encouraging the Agency to finalize a regulation begun under the previous administration that requires that the trans fat content of food be placed on the food label.

I'm pleased that finally and most recently this regulation has been finalized. This is an important regulation because it actually provides consumers an opportunity to demand foods with lower trans fat content, and also encourages companies to lower the trans fat content of their foods.

FDA estimates, and my staff thinks it's reasonable, that this is going to result in a lower rate of both non-fatal and fatal heart attacks with a multi-billion dollar benefit impact on our society.

Although the overall health of Americans continues to improve, and I think it's important that we remember that on all the depressing discussion of obesity and diabetes, we are indeed overall getting healthier; but we do have these serious and disturbing problems, Senator, that you mentioned at the beginning of the hearing. And they are significant risk factors for our biggest killers in the United States.

Accordingly, in May of this year, I issued another prompt letter to both the Departments of Agriculture and the Department of Health and Human Services requesting that as they considered changes in these important and influential policy documents, they take into account the wide body of new scientific knowledge, much that you referred to in your opening statement surrounding the links of food consumption and health outcomes.

The current *Dietary Guidelines*, while going a long way toward encouraging healthy behaviors, are not adequately designed to most effectively promote beneficial health outcomes. Recent studies suggest that adherence to the *Dietary Guidelines* has only a modest impact on the risk of cardiovascular disease, and no significant impact on other chronic diseases such as cancer.

Given the wide-ranging impact of the *Guidelines*, we believe that revisions to them, based on sound science, can have more meaningful impact on overall public health.

One of my principal concerns with the current *Dietary Guidelines* is that, with respect to fat intake, they focused almost exclusively on the reduction of intake of saturated fats and cholesterol. They do not adequately account for other types of bad fats, if you will, such as trans fatty acids; and good fats such as omega-3 fatty acids.

There is a growing body of evidence that suggests that consumptions of trans fatty acids in addition to consumption of saturated fats and cholesterol increase the risk of coronary heart disease; and the consumption of omega-3 fatty acids reduces the incidence of coronary heart disease.

The recent revision to the *American Heart Association's Dietary Guidelines* recognizes this evidence regarding omega-3 fatty acids by recommending consumption of certain fish, those highest in omega-3 fatty acids, at least twice a week, and inclusion of oils and other food sources high in omega-3 fatty acids.

The *Food Guide Pyramid*, introduced first in 1992, is also a critically important source of consumer information about a healthy diet. As noted in the Report of the Dietary Guidelines Advisory Committee, consumers find the pyramid to be the most useful part

of the *Dietary Guidelines*. In fact, they themselves suggest that readers, quote, “let the pyramid guide your food choices.”

Given the emphasis on the easy-to-understand pyramid, revisions should better differentiate the health benefits and risks for different types of foods to encourage healthier eating habits. The current pyramid, for example, combines meat, poultry, fish, dry beans, eggs, and nuts into a single, quote, “meat and beans group,” unquote.

Research suggests, however, that these foods may not be equivalent in terms of their health impacts. Consideration should therefore be given to grouping foods that have similar health effects, so that consumers can make more informed dietary choice.

OMB will be collaborating with USDA and HHS as they implement this ambitious program that they have already told you about.

We have a responsibility at OMB, mandated by Congress, to oversee the quality of information that all Federal agencies disseminate to the American people. Under the Information Quality Law, OMB has developed governmentwide guidelines on the quality of information. And they govern the activity that you are hearing about today.

OIRA, my office at OMB, has a stronger ability to participate in these activities because we’ve recently added public health science staff to our office in the fields of toxicology, epidemiology, as well as health policy.

In conclusion, we at OMB support ongoing efforts to revise and update the *Dietary Guidelines* and the *Food Guide Pyramid*. I look forward to comments and questions.

[The prepared statement of Dr. Graham follows:]

PREPARED STATEMENT OF JOHN D. GRAHAM, PH.D., ADMINISTRATOR, OFFICE OF INFORMATION AND REGULATORY AFFAIRS, OFFICE OF MANAGEMENT AND BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES

Good afternoon, Mr. Chairman, and Members of this Subcommittee. I am John D. Graham, Ph.D., Administrator, Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget. I appreciate this opportunity to testify before you today on the review and revision of the *Dietary Guidelines for Americans* and the *Food Guide Pyramid*. This has long been an area of strong interest for me. Prior to joining OMB, I served for 17 years on the faculty of the Harvard School of Public Health, where I founded the Harvard Center for Risk Analysis. In this capacity, I learned about the powerful impact of dietary choices on public health.

One of my first actions at OMB was to issue a “prompt” letter to the Food and Drug Administration (FDA), encouraging the agency to finalize its rulemaking to require that amounts of *trans* fat be listed in the nutrition labels on all food. FDA issued the final rule in July. Given the strong scientific link between the consumption of *trans* fat and coronary heart disease (CHD), it is hoped that consumers will factor information about *trans* fat content into their food purchasing decisions. The increased attention on *trans* fat content should encourage food manufacturers to reduce the amount of *trans* fat in their products. The rule is expected to have a multi-billion dollar effect in health benefits through the reduction of fatal and non-fatal heart attacks.

Although the overall health of Americans continues to improve, we have serious health problems in this country related to people being overweight and obese. These conditions are significant risk factors for heart disease and other chronic illnesses. Accordingly, on May 27, 2003, I issued another prompt letter to the Departments of Agriculture and Health and Human Services requesting that, as they consider changes to these very important and influential policy documents, they take into account the wide body of new scientific knowledge surrounding the links between food consumption and health outcomes.

The current dietary guidelines, while going a long way toward encouraging healthy eating behaviors, are not adequately designed to most effectively promote positive public health outcomes. Recent studies suggest that adherence to the *Dietary Guidelines* has only a modest impact on the risk of cardiovascular disease, and no significant impact on other chronic diseases, such as cancer. Given the wide-ranging impact that the *Dietary Guidelines* have on American dietary intake patterns, we believe that revisions to these guidelines, based on sound science, can have a meaningful impact on overall public health. For instance, CHD is our Nation's largest cause of premature death for both men and women, killing over 500,000 Americans each year. It has been shown that even a modest improvement in dietary habits may lead to significant reductions in morbidity and mortality due to CHD.

One of my principal concerns with the current *Dietary Guidelines* is that, with respect to fat intake, they focus almost exclusively on the reduction of intake of saturated fats and cholesterol. They do not adequately account for other types of "bad" fats, such as *trans* fatty acids, and "good" fats, such as omega-3 fatty acids. There is a growing body of evidence that suggests that consumption of *trans* fatty acids, in addition to consumption of saturated fats and cholesterol, increases the risk of CHD, and that consumption of omega-3 fatty acids reduces the incidence of death due to CHD. The recent revision to the American Heart Association's dietary guidelines recognizes this evidence regarding omega-3 fatty acids by recommending consumption of certain fish (those highest in omega-3 fatty acids) at least twice a week and inclusion of oils and other food sources high in omega-3 fatty acids.

The *Food Guide Pyramid*, which was first introduced in 1992, is also a critically important source of consumer information about healthy dietary patterns. As noted in the *Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans* (2000), consumers find the *Pyramid* to be the most useful part of the *Dietary Guidelines*. In fact, the *Dietary Guidelines* themselves suggest that readers "let the pyramid guide your food choices."

Given the emphasis on the easy-to-understand *Pyramid*, revisions should better differentiate the health benefits and risks from different types of foods to encourage healthier eating habits. The current *Pyramid*, for example, combines meat, poultry, fish, dry beans, eggs, and nuts into a single "Meat and Beans Group." Research suggests, however, that these foods may not be equivalent in terms of their health effects. Consideration should therefore be given to grouping foods that have similar health effects so that consumers can make more informed dietary choices.

Section 301 of the National Nutrition Monitoring and Related Research Act of 1990 (7 U.S.C. 5341) requires the Secretaries of USDA and HHS to jointly publish a report entitled *Dietary Guidelines for Americans* at least every 5 years. The last report was published in 2000. OMB plans to work closely with the Departments of Agriculture and Health and Human Services as they consider revisions to the *Dietary Guidelines for Americans*. USDA and HHS have appointed members to a Dietary Guidelines Advisory Committee, which is composed of 13 nationally recognized experts in the field of nutrition. This Committee has been established to review the available science and provide expert advice as the revision process goes forward. USDA has just published a request for comment on the proposed daily food intake patterns and the supporting technical data for the *Pyramid*. These proposed patterns and data, along with the comments received through the notice, will be shared with the 2005 Dietary Guidelines Advisory Committee. The Advisory Committee will issue a report to the Secretaries of Agriculture and Health and Human Services, with suggested text for the *Dietary Guidelines* and rationale for any changes made from the 2000 edition. The report should be made public by the fall of 2004. The revisions to the *Dietary Guidelines* and the *Pyramid*—which are scheduled to be published by USDA and HHS in the winter of 2005—will work in concert, and the Advisory Committee will inform both processes.

OMB's collaborative efforts with USDA and HHS will complement our oversight responsibilities in a related area: information quality. Under the Information Quality Law,¹ OMB has developed government-wide guidelines to ensure and maximize the quality of information disseminated by agencies, information such as that contained in the *Dietary Guidelines* and the *Pyramid*. OIRA's ability to play a stronger role in these issues in the years ahead will be enhanced with the recent addition to OIRA's staff of analysts with expertise in the fields of toxicology, epidemiology, decision science, and health policy.

In conclusion, we support ongoing efforts to revise and update to the *Dietary Guidelines* and the *Food Guide Pyramid*. In particular, we recommend that they

¹Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554; H.R. 5658).

emphasize the benefits of reducing the consumption of foods that are high in *trans* fatty acids and increasing the consumption of foods that are rich in omega-3 fatty acid. That concludes my prepared testimony. If you have any questions, I would be happy to answer them.

Senator FITZGERALD. Well, thank you very much, Dr. Graham. And I want to compliment you for getting involved in this whole discussion. As you said at the start of your testimony, it's unusual for the OMB to be involved in a hearing like this. But when you think about it, it's your office in the White House that has to deal with our budgetary problems.

And you, having served at the School of Public Health at Harvard, certainly would know the costs to our society and to our economy by problems that come from diabetes and obesity. So I applaud you for inserting yourself into this debate.

I want to ask at the start whether the panelists think that the *Dietary Guidelines* that are being revised, whether they should be directed at healthy Americans or should there be some guidelines directed at overweight Americans. The reason I ask this question is because a majority of Americans, it would now appear a majority of American adults, about 64 percent, are overweight.

So wouldn't it make sense to address the *Guidelines* to that majority that is overweight. Dr. Lawrence, would you have any thoughts on that?

Dr. LAWRENCE. The *Guidelines*, Mr. Chairman, are designed to lay out a nutritional blueprint. Overweight and obesity is a balance between calories in and calories out.

And it is extremely difficult to set up basically two completely different sets of nutritional standards for that kind of grouping. Good nutrition is good nutrition, whether or not one is overweight and obese or not.

The issue becomes one of calories in, calories out. The equation is always based on what one eats versus what one expends. So as we move forward, I think that the strategy that probably would be more profitable would be to translate the information that is garnered from the scientific review itself about what constitutes good nutrition in clear, concise messages for all Americans.

One of the ways that I think that we can approach the issue is to have people understand that physical activity is a key aspect of moderating weight. Personally, I had a difficult time my entire life moderating my weight. And the way that I deal with it is by changing the equation. Reduce the intake, increase the activity, and weight is moderated.

I watched the *Guidelines* carefully because they give me a standard for nutrition that I should be observing and attempting to maintain.

Senator FITZGERALD. Dr. Hentges.

Dr. HENTGES. Senator, your question is a very interesting one, and one that the Dietary Guidelines Advisory Committee did start to address and look at as they set up working groups to move forward. One of those working groups is specifically looking at weight maintenance, physical activity together.

And they did actually go through some of the thoughts that you have had here. Is it an issue of maintaining weight. Is it losing weight and maintaining it after it has been lost. And so those de-

bates are ongoing. And the Committee does recognize the question that you put forth.

Senator FITZGERALD. Well, it will be interesting to see how you come out on that. Now, Dr. Hentges, I was pretty tough in my opening statement on the USDA. I have great regard for the Department and for the good work that it does for our agricultural community. And I come from a big agricultural state and have done a lot myself to promote the interests of corn and soybean producers.

But do you not agree that it's a difficult task that you are called upon on one hand, being there as kind of a department to advocate for the interests of our American farmers; and on the other hand, now being called upon to set nutritional standards for Americans.

If the interests of the grain farmers or American farmers aren't aligned with the interests of consumers of food, how do you deal with that? And aren't you likely to be buffeted from side to side by all the ag interest groups that will descend upon the Department to try and influence the guidelines you put out?

Dr. HENTGES. As you know, USDA's overall mission is a safe, affordable, nutritious food supply. And in our partnership with the Department of Health and Human Services, on looking at diet and health issues, what the agriculture brings forth in that partnership is that knowledge of everything from production to processing to the entire food chain programs where you have food and supply economics as well as education programs through the extension service, and nutrition research as noted in the six human nutrition research centers that USDA have.

So the entire food chain knowledge works in partnership with Health and Human Services on their public health knowledge to provide this overall logical recommendations.

And I have, I would say that that partnership advances us on what needs to be done, what kinds of foods need to be provided.

The Department has a food consumption survey. It also has, maintains the nutrient database for foods. And these programs work in concert with Health and Human Services as well in the national health, in Hanes Consumption Survey Program.

Senator FITZGERALD. Now, there are several published reports that describe how the *Guidelines* were put together in the year 2000, the last time the *Guidelines* were revised. And there are a lot of stories that were written about how your panel recommended to the Department that the *Guidelines* recommend, I think they wanted to use the word "limit" on limit the intake of sugar; and at the behest of sugar growers, the Department appeared to change that wording to instead of limit, said moderate.

Now, isn't that a pretty clear example of where the Department can get pressured by agricultural interests?

Dr. HENTGES. I was not there at that time, so I do not know the specifics of what actually happened. But I know that the issue over the years for all editions has been that there be a consistency of language. And we have seen language changes over the five editions.

I believe in 1985, and Dr. Lawrence can correct me if this isn't right, in 1985, the language consistently talked about avoidance. And then in 1990, the language consistently changed to choose a

diet, with the idea that negative language wasn't helping, and more positive was.

So as I understand the issue that you referred to, that again was a consistency across *Guidelines* language choice.

Senator FITZGERALD. Now, these *Guidelines* first started coming out in 1980. But as I said in my opening statement, I indicated there has been a dramatic increase in obesity, weight gain, and diabetes during the time that we've had the *Guidelines* in effect.

Isn't that troubling to the USDA and the HHS? I mean, clearly something's gone wrong. We can't just say that it's not Americans aren't exercising enough. Maybe they aren't. Then we have to revise the *Guidelines* with the expectation that they are not going to exercise as much as we'd like them to.

Would you care to comment, Dr. Hentges?

Dr. HENTGES. We currently have a *Federal Register* notice that was published on September 11 for the technical revisions of the *Food Guide Pyramid*. One of the questions that we are addressing in that technical notice is what is the appropriate energy level.

National Academy of Sciences in its deliberations on the dietary recommended intakes, the DRI panels, put together estimated energy requirement equations. And one of the factors in those equations is a coefficient that takes into account your activity.

And so as to Dr. Lawrence's point earlier, the balance of energy, what is the appropriate energy level. So, yes, it is troubling that we have great recognition of the pyramid, but we do have what seems to be a low implementation and lack of knowledge that you first must select an appropriate energy level as you select the rest of your food pattern.

Senator FITZGERALD. Dr. Lawrence, do you care to comment on that, just the fact that obesity and diabetes have increased dramatically since the *Dietary Guidelines* first came out?

Dr. LAWRENCE. Epidemiologically, we have seen an increase in diabetes. We have seen an increase in overweight and obesity. I am unaware of any science that directly links those two.

I think that it all comes down to an issue again, Mr. Chairman, of establishing what constitutes good nutrition, and then communicating that in a way that the Nation and individuals can understand about how one maintains good nutrition and balances calories in with calories out.

The phrase that I use for what my trainer has taught me is that I need to earn my calories every day, which is a very simple one-liner; but also is difficult to tailor messages to meet each and every category of individual. So the question becomes one of how do we, in a public health way, express to the individuals who are at risk that this constitutes good nutrition; and here is how you maintain your most optimal health status.

Senator FITZGERALD. Now, in the next panel, I think all of the witnesses are going to at least argue, or will at least agree that there are two problems with the food pyramid: One, that it really doesn't distinguish types of carbohydrates, healthy and unhealthy carbohydrates, and also doesn't really distinguish between some healthy fats and fats that are less likely to be healthy.

And that gets to the question I'd like to ask Dr. Graham. You wrote the letter encouraging USDA and HHS to include informa-

tion on omegas-3 fatty acids and trans fats in the *Dietary Guidelines*. Is that a concern of yours that the food guidelines don't really differentiate between types of fats and perhaps types of carbohydrates, although you didn't really mention that in your letter as I recall.

Dr. GRAHAM. No. And certainly our letter was not intended to be a comprehensive critique of either the *Guidelines* or the *Pyramid*. But, yes, we do feel there needs to be some more attention to the differences between, think of it as good fats and bad fats.

And I think that if you look at the history and the evolution, you already see evidence of the *Guidelines* gradually incorporating some of that evidence. But as you said earlier in the hearing, there has been quite a substantial body of evidence since 5 years ago. And I think there's room for more progress in that direction.

Senator FITZGERALD. Well, my final question, and this may be unfair to get Dr. Graham involved in this debate, but from your perspective at the OMB, you want to be concerned, as you said in your statement, that science determines the *Guidelines*, and not politics; that this is far too important to play politics with.

Do you have any preference on the agencies or the agency that should be in charge of drafting the *Dietary Guidelines*, or are you comfortable with the USDA and HHS jointly doing the *Guidelines*?

Dr. GRAHAM. Well, Senator, I listened very carefully to your opening statement on that question, and that's the only thing I can react to because I haven't seen any specifics behind the idea you have. But I think one thing to keep in mind is there are a large number of well-trained, well-motivated and very health-oriented professionals at the U.S. Department of Agriculture.

And in your advocacy of trying to make progress in this area, I hope you'll continue to think through the question of whether there's a way to harness that expertise without trying to in some sense create an artificial separation between different units who are inevitably, quite frankly, going to participate in a process like this.

The other comment I would add is you have an understandable motivation to try to take the commercial interests out of this process and try to let the science speak. But it's even more complicated than that. Because if you look closely at the various segments of the food industry, there's tremendous scientific and technical expertise in the food industry.

And they have organizations like the International Life Sciences Institute who make a very constructive contribution to the discussion of food, nutrition and public health. So I would encourage you to think of ways to sort of broaden the participation, but in a disciplined way that will allow the science to speak.

Senator FITZGERALD. Well, thank you. One final question, Dr. Graham. Do you have any, Dr. Graham or the others, do you have any thoughts on the composition of the current panel?

I know it's been criticized by the Center for Science and the Public Interest I think it was. They thought that some of the scientists on the 13-member advisory panel were already too tied to industry. And they were pointing out that some of those scientists, although good scientists, had been paid by various agricultural or food industry interests to produce research on their behalf previously.

Do any of you have any concerns about ties that members of that panel may have to people with too big of an economic stake in this debate?

Dr. GRAHAM. Well, one point I would make, Senator, is that if the participating scientists, and I haven't reviewed the individuals, but if they didn't have any ties to any of these segments of the diverse food industry or to the agencies who have an interest in this issue too, I would wonder whether they were genuinely experts in the subject area. And I hope we are going to make sure that we go get the most knowledgeable people and use that as our most important guideposts.

Dr. HENTGES. I can tell you, Senator, that the four major professional nutrition societies took it upon themselves for the first time, this would be the American Society of Nutritional Sciences, American Society of Clinical Nutrition, the Institute of Food Technologists and American Dietetics Association, all independently wrote letters to the Secretaries supporting and in fact endorsing the selection of this committee.

Dr. LAWRENCE. I would add one thing, sir. And that's to keep in mind that this is an open scientific process. The thirteen members will be working through seven subcommittees that are under the Federal Advisory Committee Act, which means that the procedures will be transparent.

The Committee broke itself into a subgroup on energy balance and weight maintenance, one on nutritional adequacy, one in hydration, one on fatty acid metabolism, one on carbohydrate metabolism, one on ethanol metabolism and one on food safety.

These will all be open scientific processes. And the public gets to weigh in. Advocacy groups get to weigh in. Certainly Members of Congress get to weigh in, should they so choose.

And I would say that I agree with Dr. Graham's observation that it's very difficult to find someone who is truly an expert who has not worked in one of these areas.

Senator FITZGERALD. Well, that's a good point. And I suppose if you get a broad enough spectrum of viewpoints, they'll all cancel each other out so that no one viewpoint would take unilateral control of the panel.

Well, thank you all very much. I appreciate you coming up here to testify. And I'd like to invite the second panel to come up to the witness table.

On the second panel, we have Dr. Dean Ornish, Clinical Professor of Medicine at the University of California in San Francisco; Dr. Walter Willett, the Fredrick John Stare Professor of Epidemiology and Nutrition at the Department of Nutrition and Epidemiology, Harvard School of Public Health; Dr. Stuart Lawrence Trager, Clinical Assistant Professor of Orthopedic Surgery with the Atkins Center for Complimentary Medicine; Mr. Michael F. Jacobson, Director of the Center for Science in the Public Interest.

And I do believe Senator Specter wanted to come to introduce Dr. Ornish. So, Doctor, I'll maybe wait for you to begin until the end. And why don't we start with Mr. Jacobson.

And Dr. Willett and Dr. Trager, could you move your name tags in front of you, thanks.

**STATEMENT OF MICHAEL F. JACOBSON, Ph.D., EXECUTIVE
DIRECTOR, CENTER FOR SCIENCE IN THE PUBLIC INTEREST**

Mr. JACOBSON. Thank you very much, Senator. Thank you very much, Senator. I appreciate the opportunity to testify at this very interesting hearing. And I applaud you for holding the hearing.

I'd like to emphasize three major points. The first two concern the Federal Government's dietary advice to the public. The third concerns the utter failure of the Government to adopt policies and programs to translate its dietary advice into improved diets.

The basic problem with the Food Guide Pyramid is that it fails to distinguish between better and worse foods within a food group, thus the dairy group mixes fat free milk with high fat cheese. The protein group mixes fatty meat with wholesome beans and fish. The grains group mixes white bread with whole wheat bread.

One could follow the pyramid's advice and have either a terrific diet or an awful diet. The pyramid needs to be revised so as to encourage people to eat more of the most healthful foods and less of the least healthful ones.

Several years ago, my organization took a stab at that by developing not a triangle, but a real pyramid, four sides, that divided foods into the good, the medium and the seldom foods. And there are various other graphic ways to distinguish between the better or worse foods within a category.

The *Dietary Guidelines for Americans*, a very different document, provides more valid advice than the pyramid, and serves as a useful reference for nutritionists and journalists. It should be updated, and it's timely to have a review.

I think many people will have views on whether to include omega-3 fatty acids or whatever. However, no matter what it says, the public never sees anything beyond the headlines.

Several of those headlines need to use clearer, stronger language and highlight specific foods to avoid. For instance, one guideline admonishes people to choose a diet low in saturated fat and cholesterol and moderate in total fat. To be more useful to the average person, it should say something like, "Eat less meat, cheese and egg yolks."

Senator FITZGERALD. Doctor, can I interrupt you for a second to give special dispensation to Senator Specter to introduce his friend, Dr. Ornish. And I apologize for this interruption, and I hope you'll forgive me, but I need to be mindful of Senator Specter's time. And I will go right back to you right after that.

Mr. JACOBSON. Of course.

Well, thank you. I only wish I had as generous an introduction from the Senator from Washington, D.C.

[Laughter.]

That will have to wait. As I was saying—

Senator SPECTER. I can stay and reintroduce you.

[Laughter.]

Mr. JACOBSON. As I was saying, for *Dietary Guidelines for Americans*, most people don't see beyond the actual ten, there are ten now, *Guidelines*. Several of the *Guidelines* need to use clearer, stronger language.

Instead of saying, "Choose a diet that is low in saturated fat and cholesterol and moderate in total fat," which doesn't connect very

well with my Aunt Esther, we need to use something, language more like, “Eat less meat, cheese and egg yolks to reduce saturated fat and cholesterol.”

Similarly, the guideline concerning sugars now reads, “Choose beverages and foods to moderate your intake of sugars.” As you noted in your questioning, the food industry forced the Government to replace the more candid word “limit” with the muddy “moderate.”

The *Guideline* could state, “Consume less soda pop, candy and other sweets to reduce your intake of sugars,” and similarly with other guidelines.

Unfortunately, as you pointed out, when the Center for Science and the Public Interest reviewed the members of this committee, we found that there are numerous people with very close ties to the food industry and were unlikely to get the most useful guidelines possible.

Just as you mentioned, having USDA co-oversee the development of the *Guidelines* is like having the fox oversee the chicken coop. We are putting the fox right in with the chickens, in with this kind of committee, where a couple of members of the Committee serve on boards of trustees of industry trade associations.

And there are plenty of distinguished people, distinguished researchers who don’t have those kinds of close corporate ties. I’ve suggested to the Secretaries that they replace several members of the Committee with people who don’t have those kinds of industrial biases.

Most importantly, though, the Government does virtually nothing to implement its dietary advice in terms of education programs and food and agricultural policies. We live in a society which automobiles, television, urban design, marketing practices and the wealth to eat anything, at any time, conspire to promote obesity, heart disease and other health problems.

The Federal Government needs to lead a major effort to promote better diets and more physical activity. However, the Division of Nutrition and Physical Activity at the Centers for Disease Control has an annual budget of only \$35 million. That compares to McDonald’s one billion dollars plus marketing budget, over a billion dollars just for that one company.

A serious effort to promote health would include such measures as requiring chain restaurants to list the calorie content next to each item on menu boards and menus. We have got nutrition information on packaged foods. It’s high time that people who went to restaurants got a modicum of nutrition information.

Several states in the District of Columbia are considering legislation that would require calories on menu boards and in menus. The Federal Government should consider similar legislation.

We need to protect children’s health by getting soft drinks and other unhealthful foods out of schools, and getting commercials for junky foods off of TV shows watched by young children. The CDC needs to mount well-funded media campaigns to encourage people to eat healthier diets, to switch from white bread to whole wheat bread, to replace soda pop with water or fruit juice and the like, skim milk.

We should be eating more fruits and vegetables. We need an investment of several hundred million dollars a year.

The Food and Drug Administration should help make shopping easier by developing a healthy food symbol that companies could use on labels to highlight the best choices. The Swedish government did that several years ago.

The Government needs to use its own facilities, from Congressional cafeterias to upgrade that vegetable platter that Senator Specter talked about, to Federal prisons, to Defense Departments to the Defense Department commissaries and mess halls. Government has a lot of reach. And state and local governments could do the same.

And Congress should explore pricing mechanisms, taxes, subsidies and other means that would reduce the costs of the most healthful foods, such as fruits and vegetables, and increase the costs of the least healthful foods such as meat and cheese. One simple option would be to give food stamp recipients bonus coupons for fruits and vegetables.

Well, I appreciate your attention. Thank you very much, sir.

Senator FITZGERALD. Thank you, Mr. Jacobson. With the consent of the Committee, I would like the Committee record to show no interruption in your testimony, and to show Senator Specter's introduction of Dr. Ornish immediately following.

[The prepared statement of Mr. Jacobson follows:]

PREPARED STATEMENT OF MICHAEL F. JACOBSON, PH.D., EXECUTIVE DIRECTOR,
CENTER FOR SCIENCE IN THE PUBLIC INTEREST

Thank you very much for holding this hearing and inviting me to testify. I would like to emphasize three major points. The first two concern the Federal government's dietary advice to the public through the *Food Guide Pyramid* and *Dietary Guidelines for Americans*. The third concerns the utter failure—or inability—of the government to translate its dietary advice into improved diets.

The basic problem with the *Food Guide Pyramid* is its failure to distinguish between better and worse foods within a food group. Thus, the dairy group mixes fat-free milk with high-fat cheese. The protein group mixes fatty meat with wholesome beans and fish. The grains group mixes white bread with whole wheat bread. Thus, one could follow the pyramid's advice and have either a terrific diet or an awful diet. The pyramid needs to be revised so as to encourage people to eat more of the most healthful foods and less of the least healthful. My organization did that several years ago by creating a real pyramid that separates each category of food into "anytime," "in moderation," and "seldom" foods.

Turning now to the *Dietary Guidelines for Americans*, it provides more valid dietary advice and serves as a useful reference for nutritionists and journalists. However, the general public never sees anything beyond the 10 headlines. For starters, 10 items is far too many to keep in mind. That number should be reduced.

More importantly, several headlines need to use clearer, stronger language and highlight specific foods to avoid. For instance, one guideline admonishes people to "Choose a diet that is low in saturated fat and cholesterol and moderate in total fat." To be more useful to the average person, it should say something like: "Eat less meat, cheese, and egg yolks to reduce saturated fat and cholesterol." Similarly, the guideline concerning sugars now reads "Choose beverages and foods to moderate your intake of sugars." The food industry forced the government to replace the more candid word "limit" with the muddier "moderate." The guideline should state: "Consume less soda pop, candy, and other sweets to reduce your intake of sugars." The guideline stating "Choose and prepare foods with less salt" could be strengthened by stating "Cut your salt intake by eating fewer salty processed foods and restaurant meals." Unfortunately, the Committee recently chosen to revise the Dietary Guidelines includes numerous people with such close ties to the food industry that we are unlikely to get the most useful guidelines.

Most importantly, though, the government does virtually nothing to implement its dietary advice in terms of education programs and food and agriculture policies. We

live in a society in which automobiles, television, urban design, marketing practices, and the wealth to eat anything at any time conspire to promote obesity, heart disease, and other health problems. The Federal Government needs to lead a major effort to promote better diets and more physical activity. However, the division of nutrition and physical activity at the Centers for Disease Control has an annual budget of only about \$35 million. That compares to McDonald's \$1 billion-plus marketing budget. A serious effort to promote health would include such measures as:

- requiring chain restaurants to list the calorie content next to each item on menu boards and menus;
- banning soft drinks and other junk foods from schools;
- getting commercials for junky foods off of television shows watched by young children;
- mounting mass-media campaigns to encourage people to improve their diets, such as by replacing white bread with whole wheat bread; soft drinks with water, fat-free milk, or fruit juice; and eating more fruits and vegetables. To be effective, such programs need to be funded at a level of several hundred million dollars per year.

In addition, the government should:

- devise a "healthy food" symbol that companies could use on food labels to highlight the best choices in grocery stores. The Swedish government has done that.
- Also, the government needs to use its own facilities, from congressional cafeterias to Federal prisons to Defense Department commissaries and mess halls, to improve diets, and
- it needs to develop pricing mechanisms that would reduce the costs of the most healthful foods—such as fruits and vegetables—and increase the costs of the least healthful foods—such as meat and cheese.

Thank you very much.

Senator FITZGERALD. So, Senator Specter from Pennsylvania, welcome.

**STATEMENT OF HON. ARLEN SPECTER,
U.S. SENATOR FROM PENNSYLVANIA**

Senator SPECTER. Thank you very much, Mr. Chairman. I was told to arrive at 3:30, and I got here at 3:29.

[Laughter.]

Senator SPECTER. But I can see with your customary efficiency, Senator Fitzgerald, you are ahead of the curve as usual. And I appreciate being in your hearing room.

I might say publicly that you are an outstanding Senator. And there are 99 of your colleagues who are very regretful that you have decided to return to the private sector and your family. We are going to miss you here.

Senator FITZGERALD. Thank you.

Senator SPECTER. And thank you for presiding at this hearing. It is my pleasure to introduce a very distinguished American doctor, Dean Ornish, who is the originator and principal behind the Preventive Medicine Institute at Sausalito.

Dr. Ornish has an outstanding academic career, a summa cum laude from the University of Texas, Baylor Medical School, Harvard Medical School, Massachusetts General Hospital, and has written five books; identified as one of the most interesting men in America, people in America, pardon me, ladies, in 1996; and perhaps most significantly has been a leader in a very unusual approach to illness in working on retrogression of heart ailments.

Dr. Ornish has developed a technique and a procedure for reducing the calcification in blood vessels, not just stopping it, but reduc-

ing it. He talks about a variety of text-made stress control and yoga and diet and exercise. And now he's working on, and I think is in the latter stages, of establishing the scientific proof of retrogression of prostate cancer, so that he is an outstanding leader, a young man, but has made really remarkable progress in quite a number of fields.

He has been a witness on two occasions before the Subcommittee which I chair on Labor, Health, Human Services, and Education. And having gotten a last copy of his testimony, I can tell you it is substantive, substantial and very much worthwhile.

When he talks about obesity, he has special expertise. All you have to do is look at him and know that he has special expertise in obesity, because he is not.

His forte is of special interest to me for another reason. My son has a Ph.D. in nutrition, and been a professor—an assistant professor at Penn State for 3 years and done extensive research and has worked—has crossed paths with Dr. Ornish.

And our son, Steve, is now a medical student at the University of Vermont. Take his background in obesity, in the clinical work, and it is a very, very important field. And the Senate and the Congress and our Subcommittee, my Subcommittee has done extensive work on it so that it is a very big item.

Just on one personal note, we had a hearing with a distinguished panel as you have today, a different panel on stress reduction. And afterward we went to the Senate dining room for lunch. And everyone had fish, except for Dr. Ornish who had a vegetable platter.

And the Senate is not known for its vegetable platters. It was not haute cuisine, but Dr. Ornish truly was disciplined, was practicing non-obesity at the time.

Thank you very much, Mr. Chairman. And I thank the panelist in the middle of his presentation for letting me interrupt. As Senator Fitzgerald knows, this is a job at 100 miles an hour on roller skates, and we are always supposed to be someplace else 10 minutes ago. So thank you.

Senator FITZGERALD. Well, Senator Specter, thank you very much for that wonderful and very heartfelt introduction of Dr. Ornish. We appreciate you coming by.

And, Dr. Ornish, having had that great introduction by Senator Specter, why don't you go ahead. Thank you.

**STATEMENT OF DEAN ORNISH, M.D., FOUNDER
AND PRESIDENT, PREVENTIVE MEDICINE RESEARCH
INSTITUTE, CLINICAL PROFESSOR OF MEDICINE,
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO**

Dr. ORNISH. Thank you, Senator Fitzgerald. I'm honored to be here along with my distinguished colleagues and the visitors here.

I'm going to try to cover a lot of information fairly quickly. I also want to assume your leadership in this area, which I particularly appreciate.

I first want to talk about some of the things that Specter alluded to, to demonstrate how powerful changes in diet and lifestyle can be. Because people often think it has to be a new drug or new laser or something really high-tech to be powerful.

And as he indicated, we are able to demonstrate that even severe heart disease often can reverse when people make much bigger changes in diet and lifestyle than had heretofore been recommended. And if you looked at these patients, which we published in the Lancet and the Journal of the American Medical Association and other peer review medical journals, if you took the average amount of blockage in the coronary arteries, it got worse after 1 year, the green line, and even worse after 5 years.

This is the so-called natural history of heart disease. And these people were following the conventional 30 percent American Heart National Cholesterol Education Program Diet. It's not enough to keep heart diseases even from getting worse. But when people made bigger changes, they saw some reversal after 1 year, and even more reversal after 5 years.

There was a 90 percent reduction in the frequency of chest pain. And 99 percent of the patients blood flow to the heart is measured by cardiac PET scans, either to stop, to reverse the progression of their heart disease. We all publish this in JAMA as well.

We are about to publish findings to see whether this can affect the progression of prostate cancer in collaboration with Dr. Peter Carroll at UCSF, and the late Dr. William Fair from Sloan-Kettering. And we took men with biopsy-proven prostate cancer and randomly divided them into two groups. Half of them made these intensive changes in diet and lifestyle.

Their PSA levels, which as you know is a marker for prostate cancer, declined or improved in the experimental group; rose or got worse in the control group. And when we looked at the effect on the prostate tumors themselves grown in a tissue culture, we found a sevenfold difference between the groups that made these intensive changes compared to those who didn't.

We also have worked with Blue Cross/Blue Shield nationally and through Highmark in Pennsylvania. They found that it reduced their health care costs by half, both in those with and those without coronary disease, whereas with the mass control group, the patients didn't show those similar cost savings.

So it's not only medically effective, but also cost effective. And Medicare is now in the midst of conducting a demonstration project in hospitals around the country that we've trained through our nonprofit institute.

Now, as you indicated, there is an obesity epidemic. Two-thirds of American adults and 50 percent of children are overweight.

And just to illustrate that, these are not election returns, but these are the incidence of obesity beginning in 1985. And as it gets darker blue, it's bad, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, a new category in 1997 with 20 percent in red, 1998, 1999, 2000; and then in 2001, Mississippi, more than 25 percent of the people are overweight or obese in that state.

Now, why is that. There's a myth that you allude to in your opening statement which is that there's a *Dietary Guidelines* that said Americans should eat less fat. The percent of calories in fat is lower. Americans are fatter than ever. Therefore, the fat is not the culprit.

But in fact the reality is that Americans are eating more fat than ever but they are eating even more simple carbohydrates. So the

percentage of calories from fat is lower, but the actual amount of fat is higher than ever. So the goal is to try to decrease both.

Now, this is one way to lose weight that's very effective.

[Laughter.]

Dr. ORNISH. But like most weight loss approaches, doesn't last very long.

There's no mystery in how you lose weight. You burn more calories by exercising or you eat fewer calories, which is why if you eat less food, you can lose weight on any diet. The problem is people get hungry and they tend to get off the diet and gain the weight back.

The other way to eat fewer calories is to change not only the amount of food but also the type of food. And if you eat less fat, you are eating fewer calories, because fat has nine calories per gram, whereas protein and carbohydrates have only four.

So when you eat less fat, you consume fewer calories without having to eat less food. So you don't have the daily battle of hunger deprivation if you reduce the fat, because fat is so dense in calories.

The other reason that people eat too many simple carbs, and this is something that I think all of us here would agree on, if they eat too many calories, if they eat too many simple carbohydrates, these are things like sugar, white flour, white rice, alcohol, with a high glycemic index.

These get absorbed quickly, and so they make your blood sugar spike. Your pancreas makes insulin to bring it back down, which is good, but insulin also accelerates the conversion of calories into fat, which is not good.

And you can consume large amounts without getting full. You can consume virtually unlimited amounts of sugar without getting full.

Where we differ, and certainly where Dr. Trager and Dr. Atkins and I would differ, is where you go from there. And the goal is not to go from simple carbs to bacon and pork rinds and sausage, which are not health foods, but to complex carbohydrates, things like fruits, vegetables, whole wheat flour, brown rice, soy beans and so on in their natural forms.

These are rich in fiber, which both slow the absorption of the food so you don't get that rapid rise in blood sugar; you don't get the insulin response. And the fiber fills you up before you get too many calories. You can only eat so many apples. You are going to get full before you get too many calories.

So whole foods are more dense in nutrients. They are less dense in calories. And they are high in fiber. And they have a low glycemic index.

Again, all fats are not bad. Some are good. And the first panel made reference to the omega-3 fatty acids which can in small amounts reduce sudden cardiac death by 50 to 80 percent or more. They can reduce the risk of prostate, breast and colon cancer. And only three grams a day provide you these protective benefits.

So an optimal diet is both low in total fat and particularly in saturated fat. It contains the necessary amounts of omega-3 fatty acids, which is really only about three grams a day; low in simple carbs and high in complex carbs.

And it's a specter. To the degree you move in that direction, you are going to lose weight and gain health. So it's not just what you exclude from a diet but also what you include that's protective.

And when you go from a typical American diet that's high in animal protein, high in fat, high in saturated fat, high in oxidants, to a low-fat, whole foods, plant-based diet, you are not only reducing your intake of disease-promoting substances, but you are getting a thousand others that are protective.

Now, what about the Atkins diet. Because there has been a lot of interest in that lately. And what makes it so seductive, besides telling people what they want to hear, is that it's based on a half truth. The half truth is that Americans do eat too many simple carbs, and you do lose weight by eating fewer of them.

But the problem is that if you go to a high animal protein diet, you are getting the exact opposite of what you want. You are getting more disease-promoting substances and lower the ones that are protective.

Because protective ones, with few exceptions, are found in fruits and vegetables and grains and beans. One study of the Atkins diet funded by the Atkins Center in the *American Journal of Medicine*, found that 70 percent were constipated, 65 percent had bad breath, 54 percent had headaches.

This is not a healthy way to eat. And you might lose weight and start attracting people to you, but when they get too close, then they are going to have a problem.

[Laughter.]

Dr. ORNISH. More seriously, in a peer review journal last year, was a case reported of a 16-year-old girl who died after 2 weeks on a high protein diet, and found that the potassium and calcium were very low, which can predispose to that, which we know often happens on high protein diets. The calcium and potassium excretion is great.

Also, osteoporosis, excuse me, renal function, may decline in women in high animal protein diets. And osteoporosis is higher as well.

Now, you made reference in your opening statement, Senator, about the two articles in the *New England Journal of Medicine* about high protein diets. And the problem with these articles is that they are not measuring disease. They are just measuring risk factors, like triglycerides and weight.

They also are not comparing to what I consider a healthy diet. They are really comparing two diets, neither of which I think is particularly helpful. They compare it to American Heart Association, National Cholesterol Education Program Diet which is not very low in fat and is very high in simple carbohydrates. And they are not looking at long-term outcomes.

What they found in those two studies was that the LDL cholesterol, which is the most strongly linked with heart disease, rose a little on the American Heart Association Diet, and rose a little on the Atkins-type diet. So neither diet really did very well.

The triglycerides fell because, again, they were comparing it to a high, simple carbohydrate diet. In contrast, in our studies, we found a 40 percent reduction in healthy LDL cholesterol. And none of those patients were taking medications.

Worse, the one study that's actually looked at what happens to your heart when you go on a high protein diet, from Dr. Richard Fleming, this was also published in a peer review journal, *Angiology*, found if you look at the top two scans, the upper left is the beginning, and the upper right is after a year.

Red is good in these scans. It means there's more blood to the heart. And the blood flow improved on the low-fat diet. But on the lower two, these are representative of a patient on a high protein diet, the blood flow actually worsened.

And so you can lose weight on an Atkins type diet, but you may be harming your health in the process. We found the average person in our study lost 25 pounds and was able to keep off half that weight 5 years later. So we have long-term data.

Fewer than 1 percent of people in the National Weight Loss Registry have been able to lose weight and keep it off. And keeping it off is the key. You can lose weight, but you can't keep it off on these kinds of diets.

The last thing I want to talk about are the Mediterranean diets which are clearly a better diet, but it's not an optimal diet. If you look at the incidence of heart disease, it's lower in Mediterranean countries than the United States and England, but still lower in rural China. And you find the same pattern with breast cancer and prostate and colon cancer as well.

So, in summary, when you switch from a diet that's high in animal fat, animal protein and simple carbs, a typical American diet in other words, to what I would consider a more optimal diet, a low fat, whole foods diet; when you eat less fat, you are getting fewer calories without having to eat less food.

The high fiber content of the fruits, vegetables, grains and beans reduces your insulin level. So you lose weight. You don't get the rise in triglycerides and such. The fiber fills you up before you get too many calories. You avoid the disease-promoting substances and you get thousands of others that are actually protective.

So, therefore, an optimal diet is low in total fat, low in saturated fat, has adequate omega-3 fatty acids, low in simple carbs, high in complex carbs. It's not all or nothing. To the degree you move in that direction, you are going to lose weight and gain health. Thank you.

[The prepared statement of Dr. Ornish follows:]

PREPARED STATEMENT OF DEAN ORNISH, M.D., FOUNDER AND PRESIDENT,
PREVENTIVE MEDICINE RESEARCH INSTITUTE, CLINICAL PROFESSOR OF MEDICINE,
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Mr. Chairman, distinguished colleagues, thank you very much for the privilege of being here today. My name is Dean Ornish, M.D., founder and president of the non-profit Preventive Medicine Research Institute and Clinical Professor of Medicine at the School of Medicine, University of California, San Francisco (UCSF). I appreciate the opportunity to appear before this Committee.

In Woody Allen's movie "Sleeper," a man wakes up 200 years in the future to find that science has proved deep-fried foods to be healthy. Is the future here already?

By now, many Americans are thoroughly exasperated by the seemingly contradictory information in the press about what a sound diet is. I often hear some people say, "If the doctors can't make up their minds, I'll eat whatever I want and quit worrying about it."

That would be unfortunate. Science can help people resolve conflicting claims and to distinguish what sounds good from what is proven to be true. Nowhere are the claims more conflicting than in the area of diet and nutrition. Unfortunately, this

is an area where misinformation can make a huge difference to an individual's health and well-being. Science requires rigorous evidence to support and defend claims.

For the past 25 years, my colleagues and I at the Preventive Medicine Research Institute have conducted a series of scientific studies and randomized clinical trials demonstrating, for the first time, that the progression of even severe coronary heart disease often can be reversed by making comprehensive changes in diet and lifestyle, without coronary bypass surgery, angioplasty, or a lifetime of cholesterol-lowering drugs. These findings were published in leading peer-reviewed journals.^{1, 2, 3, 41, 46} Our recent research indicates that a similar program may affect the progression of prostate cancer as well.⁴ Along the way, we learned what is an optimal diet for losing weight and keeping it off as well as how to motivate people to make and maintain changes in diet and lifestyle.

There is an epidemic of obesity facing America as well as in much of the industrialized world. Some 300,000 Americans a year die from illnesses caused or worsened by obesity, a toll that may soon overtake tobacco as the chief cause of preventable deaths. Approximately 65 percent of adults and 15 percent of children are overweight or obese, and that number is increasing.

Why? Weight is a function of energy balance. There is no mystery in how to lose weight: consume fewer calories and burn more calories. However, many Americans are eating too many calories and burning too few calories.

Americans burn too few calories because they exercise less. Cutbacks in physical education classes, the rise in labor-saving devices, and the prevalence of television, video games, and computers has reduced the amount of time that most Americans spend exercising each day. For example, just 6 percent of schools require physical education for high-school seniors. "It's time to get children, ladies, and gentlemen off the couch and onto the playground," said Health and Human Services Secretary Tommy Thompson.

Americans eat too many calories primarily because they eat too much fat and too many simple carbohydrates. Also, portion sizes have increased.

One way to eat fewer calories is by consuming less food, which is why people can lose weight on any diet that restricts portion sizes sufficiently. However, it is hard to sustain weight loss because they often feel hungry and deprived when they eat less. A panel of weight-loss experts convened by the National Institutes of Health Nutrition Coordinating Committee concluded that "there is a strong tendency to regain weight, with as much as two-thirds of the weight lost regained within one year of completing the program and almost all by five years."

An easier way to consume fewer calories is to be mindful of the *type* of food as well as the *amount* of food.

Any type of fat (saturated, monosaturated, or unsaturated) has nine calories per gram whereas protein and carbohydrates have only four. Thus, when you eat less fat, you consume fewer calories without eating less food, thereby increasing satiety without adding calories. In short, you can eat more and weigh less.⁵

The other reason that Americans consume excessive calories is that they often eat too many simple carbohydrates. These include sugar, high fructose corn syrup, white flour, white rice, and alcohol. Because these are low in fiber, large quantities of calories can be consumed without feeling full.

Also, the lack of fiber may cause these foods to be absorbed quickly, causing blood glucose levels to spike too high. Your body responds by making more insulin, but too much insulin accelerates the conversion of calories into triglycerides, which increases body fat and raises triglycerides levels. In addition, these insulin surges may cause a reactive hypoglycemia (low blood sugar), increasing hunger and a desire to eat more simple carbohydrates in a vicious cycle, sometimes called "carbohydrate cravings."

Insulin enhances the growth and proliferation of arterial smooth muscle cells, which may worsen coronary artery blockages (atherosclerosis).⁶ Over time, insulin surges may lead to insulin resistance, causing further weight gain and may contribute to diabetes. Insulin also increases the secretion of lipoprotein lipase, increasing the uptake of fat into cells, leading to weight gain.⁷

The message of some recent articles has been, "Americans have been told to eat less fat, the percentage of calories from fat is lower yet Americans are more overweight than ever. Thus, dietary fat is not responsible for obesity."^{8, 9} Actually, per capita consumption of fat has *risen* by 10 pounds/year since 1975 whereas per capita consumption of simple carbohydrates has increased even more, by 20 pounds/year. In other words, Americans are eating more fat than ever, but they are consuming even more simple carbohydrates, so while the percentage of calories from fat may be lower, the amount of dietary fat is higher than ever.

I agree with high-protein advocates such as the late Dr. Robert Atkins that many Americans eat excessive amounts of simple carbohydrates. The diagnosis is correct, but the prescription is wrong. The solution is not to go from simple carbohydrates to pork rinds, bacon, and brie, because these are high in fat (and thus dense in calories) as well as high in disease-promoting substances such as cholesterol, saturated fat, and oxidants.

A better approach is to reduce the intake of simple carbohydrates and increase the consumption of complex carbohydrates (also called “whole foods”). These include fruits, vegetables, legumes, and whole grains such as brown rice and whole wheat flour in their natural forms.

These foods are naturally high in fiber, which slows their absorption, preventing a rapid rise in blood sugar. Fiber also fills you up before you eat too many calories, whereas you can eat large amounts of sugar without feeling full. In summary, whole foods are more dense in nutrients, less dense in calories, and high in fiber.

In the Coronary Artery Risk Development in Young Adults (CARDIA) Study, for example, 2,909 healthy black and white adults, 18 to 30 years of age, were followed over 10 years. Body weight was inversely associated with dietary fiber and carbohydrate and positively associated with protein intake.¹⁰ Meat has virtually no dietary fiber.

In addition, complex carbohydrates are low in disease-promoting substances such as cholesterol, saturated fat, and oxidants and have at least a thousand substances that are protective. There is growing interest in what are known as “functional foods,” *i.e.*, foods containing substances that are disease-preventing and health promoting beyond the traditional nutrients such as the amount of fat, protein, and carbohydrates that they contain. These include phytochemicals, bioflavonoids, carotenoids such as lycopene, retinols, sulforaphanes, isoflavones, lignans, genistein, polyphenols, and other nutrients that have anti-cancer, anti-heart disease and anti-aging properties and may reduce the risk of many chronic diseases.¹¹ In other words, what we *include* in our diets is as important as what we *exclude*.

What is the evidence that complex carbohydrates are beneficial?

Increased whole-grain intake was associated with decreased risk of coronary heart disease in 75,521 women followed for 10 years.¹² A diet high in whole grains was associated with a reduced risk of type 2 diabetes in 42,898 men followed for 12 years. The relative risk of developing type 2 diabetes was 58 percent lower when comparing the highest with the lowest quintile of whole-grain intake.¹³

Whole-grain consumption improves insulin sensitivity in overweight and obese adults.¹⁴ 11,040 postmenopausal women who enrolled were matched on total grain fiber intake, but differing in the proportion of fiber consumed from whole vs. refined grain, were followed for 11 years. Fiber from whole grains, but not refined grains, was inversely associated with all-cause mortality.¹⁵ Total fat and animal fat intake were higher and carbohydrate intake was lower in those with recently-diagnosed diabetes or previously-undiagnosed diabetes in the multinational, multicenter study of the Mediterranean Group for the Study of Diabetes.¹⁶

In the Iowa Women’s Health Study, fiber from whole grains (complex carbohydrates), but not refined grains (simple carbohydrates), was inversely associated with all-cause mortality in 11,040 postmenopausal women followed for 11 years.¹⁷ In other words, the women who consumed more complex carbohydrates lived longer than those who consumed more simple carbohydrates.

What is the evidence that high protein diets may be harmful?

There has been a resurgence of interest in low-carbohydrate, high-fat diets such as the Atkins diet, so it may be useful to spend a few minutes discussing it. Just about everyone knows someone who has lost weight on this kind of diet. Given the American epidemic of obesity, isn’t that good?

Not necessarily. The goal is not just to lose weight, but to lose weight in a way that enhances your health rather than potentially harming it and allows you to lose weight safely and to keep it off. Losing weight is important, but the history of medicine is replete with examples of weight-loss approaches that were harmful to health (*e.g.*, amphetamines, fen-phen). When you go on a high-protein, high-fat diet, you may temporarily lose weight (because you are eating fewer simple carbohydrates), but you may also harm your health in the process. Also, fewer than 1 percent of people in the National Weight Loss Registry maintain their lower weight using a high protein diet. Most successful people use a low-fat diet to lose weight and maintain lost weight.¹⁸

A wide body of scientific evidence links the consumption of animal protein, saturated fat, and cholesterol with cardiovascular disease, cancer, and other chronic illnesses.^{19, 20, 21, 22, 23} High protein diets may cause loss of calcium and decreased lev-

els of urinary citrate, leading to osteoporosis and kidney stones.²⁴ Urinary excretions of calcium and acids are higher after intake of animal protein but are lower after plant-protein intake.²⁵ Ketone bodies formed on a high protein diet result in the loss of calcium, magnesium, and potassium.^{26, 27}

Recently, a case report in a peer-reviewed journal described the fatal ventricular fibrillation cardiac arrest of a sixteen-year-old girl who had started a high protein/low carbohydrate diet two weeks earlier and presented with profound hypokalemia (low potassium levels) during resuscitation attempts.²⁸ A high protein diet may increase postprandial lipemia and increases in free fatty acids which may have harmful effects on platelet aggregation (blood clots) and may promote ventricular arrhythmias (dangerous irregular heartbeats).^{29, 30}

In one of the few peer-reviewed journal articles that studied an Atkins diet, 70 percent of patients were constipated, 65 percent had halitosis, 54 percent reported headaches, and 10 percent had hair loss during six months on a high protein/low carbohydrate diet.³¹ These findings may be due to the fact that your body excretes toxic substances through your breath, bowels, and perspiration.

High total protein intake, particularly high intake of nondairy animal protein, may accelerate renal (kidney) function decline.³² In a randomized controlled trial, ketogenic diets impaired cognitive performance in higher order mental processing after only one week.³³

Why are some studies claiming that a high protein diet is better than a "low-fat" diet?

Three recent studies suggested that a high protein diet is better than a "low-fat diet" with respect to short-term changes in weight, triglycerides, and HDL-cholesterol (HDL-C).^{31, 34, 35} However, the high protein diet was compared to a conventional 30 percent-fat American Heart Association/National Cholesterol Education Program diet which was not very low in fat and was high in simple carbohydrates.

Neither a high protein diet nor a 30 percent-fat diet is very effective in lowering the harmful LDL-cholesterol (LDL-C) or in maintaining long-term weight loss.³⁶ Thus, these studies showed that *both diets were comparably ineffective*.

A high protein diet will lower triglyceride levels in someone who is eating a typical American diet or an AHA/NCEP diet that is high in simple carbohydrates. As described earlier, a diet high in simple carbohydrates causes insulin surges, and insulin stimulates the liver to make more cholesterol (by stimulating an enzyme called HMG-CoA reductase, which cholesterol-lowering drugs such as statins inhibit). This explains why high protein diets do not always exacerbate hypercholesterolemia.³⁷ To some, the fact that a high protein diet does not raise LDL-C very much is surprising given the amount of saturated fat and cholesterol in the diet. This is somewhat akin to the story of Dr. Johnson's dog walking on its hind legs: it doesn't do it very well, but it's amazing it can do it at all.

A 30 percent-fat diet reduces LDL-C by only about 5–7 percent in most patients.^{38, 39, 40} Also, since a 30 percent diet is usually high in simple carbohydrates (which increase triglycerides), a high protein diet often shows a greater reduction in triglycerides than a 30 percent-fat diet.

However, in our studies we found that a diet much lower in fat (10 percent of calories), low in simple carbohydrates and high in complex carbohydrates decreased LDL-C much more than a 30 percent fat diet: by 40 percent rather than only 5–7 percent after one year in ambulatory patients not taking lipid-lowering drugs.⁴¹ This is comparable to what can be achieved by taking cholesterol-lowering drugs but at a fraction of the cost, and without potentially harmful side-effects.

In another study, 100 people were randomly assigned to one of four diets for one year: a high protein diet; a 30 percent-fat diet; a 15 percent fat calorie-controlled diet; or a 10 percent-fat whole foods diet with an emphasis on complex carbohydrates. Weight loss was one pound/week on the 10 percent-fat diet and 0.6 pound/week on the high protein diet. Reductions in total cholesterol (TC), LDL-C, triglycerides, and TC/HDL ratios were significant only in patients either following a 10 percent-fat diet or a 15 percent fat calorie-controlled diet. Only patients following the high protein diet showed a worsening of each cardiovascular disease risk factor (LDL-C, triglycerides, TC, HDL-C, TC/HDL ratio, homocysteine, Lp(a), and fibrinogen), despite achieving statistically significant weight loss. After one year, there was a 52 percent decrease in LDL-C on the 10 percent-fat diet whereas there was a 6 percent increase in LDL-C on the high protein diet.⁴²

Need to distinguish between risk factors and actual measures of disease

Dr. Atkins claimed that his diet can reverse coronary heart disease but never published any peer-reviewed data to support this assertion, nor has anyone else.⁴³ Un-

fortunately, most studies of a high protein diet measured only risk factors such as weight and lipids rather than examining the underlying disease processes.

The only study to do so found that blood flow to the heart improved on a very low-fat whole foods diet but actually worsened on a high protein diet.⁴⁴ Serial coronary arteriography in coronary heart disease patients consuming a conventional 30 percent-fat AHA/NCEP diet revealed that the majority showed progression (worsening) of coronary atherosclerosis.^{38, 45} However, coronary heart disease patients who followed a 10 percent-fat diet demonstrated significant regression of coronary atherosclerosis after one year as measured by quantitative coronary arteriography and even more regression after five years (the amount of exercise was not significantly different between groups).⁴⁵ There was a direct correlation between the intake of dietary cholesterol and fat and changes in coronary atherosclerosis. They also had 2.5 times fewer cardiac events than the control group. In contrast, control group patients following a 30 percent-fat AHA/NCEP diet showed even more progression of atherosclerosis after five years than after one year. Also, 99 percent of experimental group patients were able to stop or reverse the progression of coronary heart disease as measured by cardiac PET scans.⁴⁶

HDL-C decreased 9 percent, yet they showed clear improvement in coronary atherosclerosis (blockages), myocardial perfusion (blood flow to the heart), and cardiac events. Thus, we need to move beyond simplistic notions that anything which raises HDL-C is beneficial and anything that lowers HDL-C is harmful. There are no data showing that the physiologic reduction of HDL-C levels with a low-fat diet is detrimental.⁴⁷

In countries such as Asia where a low-fat diet has been the norm, HDL-C levels are low yet the incidence of cardiovascular disease is among the lowest in the world. HDL returns cholesterol to the liver, a pathway known as reverse cholesterol transport. Most Americans consume a diet high in saturated fat and cholesterol, so those who are able to increase HDL-C are at lower risk than those who cannot, since they will be more efficient at metabolizing excessive dietary fat and cholesterol. However, reducing dietary fat and cholesterol may cause a decrease in HDL-C because there is less need for it. This does not confer the same risk of atherosclerosis as in Americans with low HDL levels who are consuming a high-fat diet.⁴⁸

In simple terms, when you have less garbage (saturated fat and cholesterol), you need fewer garbage trucks (HDL-C) to remove it. Eating a stick of butter will raise HDL-C in those who are able to do so, but that does not mean that butter is good for the heart. Decreases in HDL-C due to a low-fat diet have a very different prognostic significance than someone who cannot raise HDL-C on a high-fat diet.

Are some fats good for you?

Yes. Just as complex carbohydrates are beneficial but simple carbohydrates can be harmful, some fats are beneficial and others are harmful. Trans fatty acids are generally considered to be harmful. Because of this, the FDA is now requiring the labeling of trans fatty acid content on food items.

Trans fatty acids are found in many of the fast, baked, and processed foods that Americans love to eat. Food manufacturers often put oils through a process called "hydrogenation" which extends the shelf life of products. Unfortunately, it may decrease the "shelf life" of those who eat them. For example, one study found that just a 2 percent increase in trans fatty acid intake caused a 25 percent jump in the risk of heart disease.⁴⁹

On the other hand, the omega-3 fatty acids can substantially reduce the incidence of sudden cardiac death and may help prevent some forms of cancer. Only three grams per day of fish oil may reduce sudden cardiac death by up to 50 percent. More than this amount provides no significant additional benefits.⁵⁰

Saturated fats, which are rich in butter and red meat, for example, raise the harmful LDL-cholesterol and are associated with both heart disease and many of the most common forms of cancer, including prostate cancer, breast cancer, and colon cancer. Monosaturated fats are more neutral. Polyunsaturated fats may help prevent against heart disease but may increase the risk of some forms of cancer; this is controversial and is actively being studied.

I have been working with senior management of PepsiCo during the past two years in helping them to develop a variety of more healthful products at their companies, including Tropicana, Quaker Oats, Gatorade, Aquafina, Frito-Lay, and Lipton. We began with the commitment to substantially reduce or eliminate trans fatty acids from most of their products, which was announced earlier this year. I hope they inspire other food companies to follow their lead.

We are also developing nutrition and exercise education materials for schools and for the general public. When companies like PepsiCo use their marketing resources and expertise to educate people about the benefits of healthy lifestyles and to pro-

vide more healthful products that are convenient and tasty, then the health of our country may improve. Also, they can help change attitudes to make it fun and exciting to exercise and eat right rather than having it seem about boredom and deprivation.

Do we need a new food pyramid?

I agree with Dr. Walter Willett who has proposed a pioneering restructuring of the USDA food pyramid to reflect the latest research findings described in this testimony.⁵¹ The only point of difference, which is relatively minor, is the emphasis on increasing the intake of olive oil for most Americans.

Olive oil is clearly a better choice than oils that are high in saturated fat. However, olive oil lowers LDL-cholesterol only when it is consumed instead of oils that are higher in saturated fat. Since olive oil is 14 percent saturated fat, increasing the consumption of olive oil may increase the consumption of saturated fat unless it is done as a substitute for foods that are higher in saturated fat. In one study, olive oil reduced blood flow by 34 percent within hours and impaired the function of cells lining the arteries (endothelium).⁵²

In addition, a balanced intake of omega-3 fatty acids and omega-6 fatty acids may be desirable, but the ratio of omega-6 fatty acids to omega-3 fatty acids in the typical American diet is 20:1. The ratio of omega-6 fatty acids to omega-3 fatty acids in olive oil is 10:1, so consuming a lot of olive oil may worsen this ratio. And olive oil has almost none of the beneficial omega-3 fatty acids.

Also, since all oils are 100 percent fat, and fat has nine calories/gram (as described earlier), increasing the intake of olive oil is likely to increase the consumption of calories, causing weight gain.

The Mediterranean diet is clearly a better diet than a typical American diet,⁵³ but an Asian diet may be even better. Beneficial components of the Mediterranean diet include antioxidant-rich foods such as vegetables, fruits, and omega-3-rich fish and canola oils. Heart disease, breast cancer, prostate cancer, and colon cancer are even lower in those consuming an Asian diet than a Mediterranean diet.

What are effective strategies in motivating people to make and maintain beneficial changes in diet and lifestyle?

In general, my colleagues and I have found two basic approaches are effective. The first is to make small, incremental changes such as walking 2,000 steps more per day and to consume 100 calories less per day. Over time, these small changes add up and make a meaningful difference. This is the approach popularized by Dr. James Hill in his program, "America on the Move."

A second approach is to motivate people to make more intensive changes in diet and lifestyle. Paradoxically, some people find it easier to make big changes than small ones because when they make comprehensive changes in diet and lifestyle, they often feel so much better, so quickly, that it reframes the reason for making these changes from fear of dying to joy of living.

Alterations in diet, for example, may affect blood flow within hours, for better and for worse.⁵⁴ After a whole foods, low-fat meal, blood flow to the brain may improve, so people often describe feeling more alert and aware. Blood flow to the heart often improves; in our studies, most patients reported dramatic reductions in the frequency of angina within a few weeks. Erectile dysfunction may improve as blood flow increases to sexual organs.^{55, 56} Most patients are able to lose weight and keep it off.

One of the most effective anti-smoking campaigns was organized by the California Department of Health Services. Billboards featured a "Marlboro Man" character with a limp cigarette hanging out of his mouth with the headline, "Smoking causes impotence." For many men, this is more motivating than "smoking causes heart attacks and emphysema," which are too frightening to contemplate.

Many patients say that there is no point in giving up something that they enjoy unless they get something back that's even better—not years later, but weeks later. Then the choices become clearer and, for many patients, worth making. They experience that something beneficial and meaningful is quickly happening.

The benefit of feeling better quickly is a powerful motivator and reframes therapeutic goals from prevention or risk factor modification to improvement in the quality of life. To these patients, concepts such as "risk factor modification" and "prevention" are considered boring and they do not initiate or sustain the levels of motivation needed to make intensive lifestyle changes. "Am I going to live longer, or is it just going to *seem* longer?"

In our experience, it is not enough to focus only on patient behaviors such as diet; we often need to work at a deeper level. Depression, loneliness, and lack of social support are epidemic in our culture. These affect not only quality of life but also

survival. Several studies have shown that people who are lonely, depressed, and isolated are many times more likely to get sick and die prematurely than those who are not.⁵⁷ In part, this is mediated by the fact that they are more likely to engage in self-destructive behaviors when they feel this way, but also via mechanisms that are not well-understood. For example, many people overeat when they are stressed, lonely, or depressed. They sometimes say, "I use food to fill the void," or, "Fat coats my nerves and numbs the emotional pain."

In summary, an optimal diet for most people is low in both fat *and* in simple carbohydrates and high in complex carbohydrates, based predominantly on fruits, vegetables, whole grains, and legumes in their natural forms, with moderate amounts of fish or fish oil to provide protective omega-3 fatty acids.

Changing from a diet high in fat, animal protein, and simple carbohydrates to a low-fat, whole foods diet provides many benefits:

- When you eat less fat, you eat fewer calories without eating less food;
- The high fiber content of fruits, vegetables, grains, and beans reduces insulin levels, so you lose weight and lower cholesterol levels;
- Fiber fills you up before you get too many calories;
- You avoid the foods rich in substances that promote illnesses; and
- You get thousands of other substances that are protective.

It's not all or nothing; you have a spectrum of choices. To the degree you reduce your intake of simple carbohydrates *and* excessive fat, then you may lose weight and gain health.

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Senator FITZGERALD. Dr. Ornish, thank you very much. Dr. Willett.

**STATEMENT OF WALTER C. WILLETT, MD, DR.P.H.,
FREDRICK JOHN STARE PROFESSOR OF EPIDEMIOLOGY
AND NUTRITION, DEPARTMENTS OF NUTRITION AND
EPIDEMIOLOGY, HARVARD SCHOOL OF PUBLIC HEALTH**

Dr. WILLETT. Thanks very much. I really appreciate the fact that you are holding this hearing and looking seriously at these tremendous problems that we face. I will skip most of what I was going to give for background.

Senator FITZGERALD. Would you pull that microphone over?

Dr. WILLETT. Sure. I'll skip what I was going to talk about in terms of background because you very well I think indicated and described the health crisis that we are facing here. I just might add that the full price in terms of this epidemic of overweight and obesity is yet to be paid, both in human cost and in health costs, because it probably will lag at least 30 years or so before you really see all of the diabetes, the so-called renal failure and complications of that. So we haven't really seen the full price at all up until this point in time.

We have had this growing problem of overweight and diabetes. I might also add that we had made, until the mid-1980s, great progress in reducing the incidence in mortality from coronary heart disease and stroke. And beginning in about 1980, our progress totally stalled in terms of further reducing the incidence of coronary heart disease and mortality from stroke. We made a little progress in——

Senator FITZGERALD. Doctor, I'd ask you to pull the microphone even closer. Thanks.

Dr. WILLETT. Sure. We have had very little progress in these really important health indicators. But on the other hand, our long-term studies indicate that together with not smoking and regular exercise, by making the right dietary choices, we can reduce rates of heart disease by more than 80 percent, stroke by more than 70 percent, diabetes by more than 90 percent, and some cancers by more than 70 percent. So there's huge potential for health improvements that we are not taking advantage of now.

Unfortunately, the current USDA Food Guide Pyramid fails to provide useful guidance to the public, and has almost certainly led many people to make food choices that have resulted in premature death, because they avoided healthy fats in the diet that prevent cardiac arrhythmias and sudden death.

I think you have alluded to the core message of the pyramid is to eat large amounts of starch and avoid all fats. Randomized trials that have gone on for a year or more do not show that reducing the percentage of calories from fat reduces weight. And as you pointed out, that it does indicate for some people that high carbohydrate diets actually makes it more difficult to control weight.

And without going into all of the details of this debate, it's surprising how few good studies there have been of diet and weight control in the long run. Just recently we are starting to get a few studies. But given the importance of this topic, the data are actually very limited. And we clearly need to do more studies.

In our long-term follow-up of over 100,000 men and women funded by the National Institutes of Health, we saw no overall benefit for those who most closely followed the dietary pyramid and that really indicates a tremendous loss of opportunity that we've had with the current pyramid.

And, again, we also saw fatal increases in fatal heart attacks among those consuming lower amounts of unsaturated fats such as salad dressing, which is discouraged by the pyramid. As Mr. Jacobson mentioned, there are really some very fundamental flaws in the pyramid, mainly because the pyramid fails to distinguish the types of fats that—trans fats and saturated fats are something we want to limit, but unsaturated fats, and it's not just omegas-3 fatty acids. Omega-6 fatty acids also improve blood lipids and reduce cardiac mortality.

The pyramid promotes high intake of starches, and really doesn't distinguish between whole grain and refined grain adequately. And, in fact, refined grain really belongs with sugar among the things that we should be using sparingly.

Also, as pointed out earlier, the pyramid doesn't distinguish among protein sources which have very different implications for health. And the issue of high dairy consumption, which I hesitate to talk about since I grew up in Wisconsin, but this inevitably is going to introduce large amounts of saturated fat into the food supply. And somebody always eats it. And moreover, there's actually not good data that the very high levels of dairy consumption are safe in the long run.

In view of these serious shortcomings, a major redrawing of the pyramid is needed. The underlying principle should be that the pyramid is based upon the best available scientific evidence, and for this reason it should be more closely linked to the U.S. *Dietary Guidelines*.

They were not close together back in 1992 when the pyramid was created, and the *Guidelines* as mentioned earlier have been refined and moved farther and farther away from what the pyramid is today. And I think we saw with wisdom that Congress required that the *Guidelines* be reviewed every 5 years. Because science does move forward. And we do continually need to make refinements to bring it up to date and consistent with the best available knowledge.

And I do agree that responsibility for review and updating of the *Guidelines* and pyramid should not be the primary responsibility of the Department of Agriculture because of conflicts of interest with agro-economic sectors that are almost inevitable.

A better arrangement would be to have the pyramid be the primary responsibility of the Department of Health and Human Services in consultation of course with USDA and other groups of nutritionists within the Government, because the basic issue is human health.

Finally, the pyramid should undergo continuous evaluation just as the *Guidelines* do. For example, we have done this using our large prospective data bases, and we are prepared to work with the Department of Agriculture on Health and Human Services to, while their *Guidelines* are being revised, to evaluate in our large populations where we can essentially look at how people ate all the

way from 1990, 1980 up until now, and see how various choices influence the outcome.

So we can simulate different combinations of dietary choices as might be suggested by different guidelines and actually assess what the estimated outcome would be. And we are prepared to work with the national committees doing that job.

Americans do deserve the very best guidance about dietary choices because their health is at stake. And with a better process for developing and refining our dietary advice, we can make an important difference in the health and well-being of our Nation. Thanks.

[The prepared statement of Dr. Willett follows:]

PREPARED STATEMENT OF WALTER C. WILLETT, MD, DR.P.H., FREDRICK JOHN STARE
PROFESSOR OF EPIDEMIOLOGY AND NUTRITION, DEPARTMENTS OF NUTRITION AND
EPIDEMIOLOGY, HARVARD SCHOOL OF PUBLIC HEALTH

The USDA Food Guide Pyramid: Lost Opportunity for Better Health

The state of health and health care in the U.S. is alarming. Over $\frac{2}{3}$ of the U.S. adult population is overweight or obese, and this rate is growing rapidly. The long-term health consequences of this epidemic are dire. Medical care costs are increasing at over 10 percent per year, and the full costs of overweight and obesity have yet to be experienced as they have a 10–30 year lag.

On the other hand, our long-term studies indicate that, together with not smoking and regular exercise, making the right dietary choices can reduce rates of heart disease by more than 80 percent, stroke by more than 70 percent, diabetes by over 90 percent and some cancers by more than 70 percent.

Unfortunately, the current USDA Food Guide Pyramid fails to provide useful guidance to the public, and has almost certainly led many persons to make food choices that have resulted in premature death. The core message of the Pyramid is to eat large amounts of starch and avoid all fats; randomized trials of one year or longer document that this does not lead to better weight loss, and recent evidence suggests that this may actually make weight control more difficult for many people. In our long-term follow-up of over 100,000 men and women funded by the NIH, we found no overall benefit for those who most closely followed the Food Guide Pyramid. Also, we saw increases in fatal heart attacks among those consuming lower amounts of unsaturated fats, such as in salad dressing, which are discouraged by the Pyramid.

Major flaws in the present Pyramid include:

1. Failure to distinguish types of fat, some of which are undesirable, such as trans and saturated fat, but unsaturated fats have a positive role in maintaining health.
2. Promotion of high intake of starches, whether refined or whole grain, which contribute to excessive calories and risks of diabetes and heart disease.
3. Failure to distinguish among protein sources, which have very different implications for health.
4. Promotion of high dairy consumption, which inevitably introduces large amounts of saturated fat into the food supply.

In view of these serious shortcomings, a major redrawing of the Pyramid is needed. The underlying principle should be that the Pyramid is based on the best available scientific evidence. For this reason it should be more closely linked with the U.S. Dietary Guidelines, which are appropriately updated every five years at the request of Congress. Responsibility for review and updating of the Pyramid should not be the primary responsibility of USDA because conflicts of interest with agro-economic sectors are almost inevitable. A better arrangement would be to have the Pyramid be the primary responsibility of HHS in consultation with USDA because the issue is human health.

Finally, the Pyramid should undergo continuous evaluation. For example, as we have done using large prospective databases, whether adherence to the content of the Pyramid is associated with better long-term health should be assessed. In addition, the ability of the Pyramid to convey its content to various segments of the population needs to be carefully evaluated.

Americans deserve the very best guidance about dietary choices because their health is at stake. With a better process for developing and refining our dietary advice, we can make an important difference in the health and wellbeing of our Nation.

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Senator FITZGERALD. Dr. Willett, thank you very much. And last but not least, Dr. Trager. Thank you for waiting patiently.

STATEMENT OF STUART TRAGER, MD, ATKINS NUTRITIONALS, INC.

Dr. TRAGER. Mr. Chairman, thank you for asking me to appear before your Committee. I commend your leadership in trying to tackle the serious national crisis in obesity.

After following Dr. Ornish, it would be easy to think it's a beauty pagent between diets. What is more important is that we all remember the common enemy today is fighting obesity. It is disheartening that as we fight to manage the rising costs of health care and to improve the quality of life for our population, research suggests that less than 20 percent of individuals trying to lose or maintain their weight actually follow recommendations to increase physical activity and reduce their caloric consumption.

As a physician and an orthopedic surgeon, I have seen the difficulty my patients have eating less. And as a six-time Iron Man triathlon finisher, I know a great deal about exercising more.

This is not about mortgaging your health, bad breath or body odor. It is about recognizing that four-fifths of those who want to take an active role in managing their weight have abandoned recommendations to eat less and exercise more.

With the incidence of obesity and overweight doubling in our adult population, and tripling amongst our adolescents, there's no longer time for continued repetition of a message that has proven ineffective. We must look for new strategies that in addition to being supported by medical science are more likely to alter the course of this public health epidemic.

To this end, I would like to review with you today some of the emerging science supporting controlled carbohydrate nutrition, a strategy that has worked for me and can help many in their fight against obesity.

Most notable of the recent prospective trials comparing this approach with standard dietary intervention are studies from Duke, University of Cincinnati, and a multicenter NIH-funded pilot program conducted at the Universities of Pennsylvania, Colorado and Washington that has been published in the *New England Journal of Medicine*.

In sharp contrast to many of the previous attempts to discredit this nutritional strategy by simply comparing low and high fat intake, investigators in these studies demonstrated that by limiting

carbohydrates, the principle that serves as the cornerstone of this approach, individuals achieve equal or greater weight loss than that seen with traditional recommendations.

Of equal importance, these results were achieved in conjunction with consistently lowered triglyceride levels as well as an increase in HDL cholesterol without significant elevation of either LDL, bad cholesterol or total cholesterol. In addition to showing efficacy, it is vital to recognize that in none of these studies was there indication of any health risk with this strategy. And in fact significant reduction in established coronary risk factors was noted, as in the trial completed at Duke University by Dr. Eric Westman, where triglyceride to HDL ratio demonstrated an eightfold improvement when carbohydrates were restricted.

Furthermore, work by Dr. Jeffrey Volek from the University of Connecticut has shed light on claims suggesting a controlled carbohydrate program will lead to an unhealthy rise in post-meal circulating fat levels within the bloodstream, showing when carbohydrates are restricted, post-meal lipemia actually decreased.

Controlled carbohydrate nutrition is not only supported by but also founded in science. At the center of this foundation is the metabolic shift from carbohydrate-based energy production to a physiologic state where energy for fuel is derived from the oxidation or breakdown of stored fat.

In addition to the weight loss that occurs from this transition, Dr. Westman's work at Duke lends credence to the anecdotal reports of people actually feeling better while following this strategy, with 85 percent reporting improved energy, 51 percent improved mood, and over one quarter of subjects reporting lessened heartburn and pre-menstrual symptoms.

The Atkins Approach is a four-phase strategy addressing initial obstacles like carbohydrate cravings as well as the far more important goal of instilling life-long dietary and physical activity modifications that we know yield lasting net health benefits.

Inherent to the success of this approach is the identification and reintroduction of healthy carbohydrates into the diet in an amount that does not promote weight gain, and an understanding that when it comes to impacting blood sugar, not all carbohydrates produce the same result. Through examination of glycemic index, we can measure a carbohydrate's impact on blood sugar and the resulting production of insulin.

The modulation of insulin, as we've earlier heard, through dietary choices is extremely important. By educating consumers about nutrient dense whole foods rather than highly processed and refined simple carbohydrates, controlled carbohydrate nutrition offers a notable alternative to caloric restriction and fat reduction; a message that has been too difficult for many to follow.

With increasing public interest in this nutritional strategy resulting in renewed enthusiasm for fighting obesity, and medical science demonstrating actual health benefits rather than risks, we are truly in a unique position. Counting carbohydrates is quite simply easier for many than eating smaller amounts of less satiating foods.

As the science in support of controlled carbohydrate diets continues to mount, and the National Guidelines are revisited, much

can be gained from decisions made to enhance, rather than stand in the way of this very encouraging development in fighting obesity.

To this end, we would hope that revisions to the *Guidelines* include recommendations that recognize the benefits of adequate protein consumption, incorporate a balance of untreated fats, and finally, teach carbohydrate awareness so that Americans can learn to respect and understand how this group of macronutrients impacts not only their weight but also their health.

Additionally, incorporating the concept of glycemic index is of great importance, offering a mechanism to counter the increasing consumption of highly refined carbohydrates, and aid in refocusing attention toward those that are nutrient dense and should be part of a healthy diet.

If more research is needed, let's fund it. Providing unrealistic goals has led to apathy. And non-specific recommendations have led to misinterpretation. The time is right to rely on evidence-based science to develop strategies to effectively impact this crisis.

Thank you for your time, and again your interest, in this very important subject.

[The prepared statement of Dr. Trager follows:]

PREPARED STATEMENT OF STUART TRAGER, MD, ATKINS NUTRITIONALS, INC.

Chairman Fitzgerald, members of the Committee, I am Dr. Stuart Trager representing Atkins Nutritionals, Inc., the company founded by Dr. Robert Atkins to provide adherents to the Atkins low carbohydrate lifestyle with educational materials and products to help them achieve success on the Atkins plan. I thank you for asking me to appear before your Committee. I commend you for tackling the serious national crisis in obesity, diabetes and other ills by looking into ways the government can improve its recommendations to Americans on their diets.

Magnitude of Current Problem

With over 300,000 deaths annually in the United States attributed to obesity, the current epidemic has reached a state of true emergency, referred to as one of the top threats to the health of our Nation by the Centers for Disease Control (CDC). This crisis has steadily increased in over the past 30 years, with current estimates suggesting that 64.5 percent of American adults are overweight or obese and that approximately $\frac{1}{3}$ of the population is in the category of clinical obesity, defined as a body mass index of more than 30 Kg/M². This alone represents a two-fold rise since 1980.

These statistics, combined with reports suggesting that our adolescents and teens are currently becoming increasingly sedentary—one study showing that by the age of 18 or 19, up to 56 percent of surveyed girls reported no regular physical activity—raise additional cause for concern. In our adolescent population, the prevalence of overweight and obesity has nearly tripled in the past 20 years, as compared to the doubling in the adult population. Even in a study looking at individuals trying to lose weight or not gain weight, fewer than 20 percent of these people are following recommendations to increase physical activity and reduce calories.

In addition to the tremendous human cost associated with lost lives due to obesity, we are gaining increased awareness of the relationship between this condition and numerous other significant diseases, including diabetes, coronary artery disease, hypertension, asthma, gout, gall bladder disease, stroke and certain cancers, including prostate, liver, kidney, colon and breast. Estimates of the number of years of life lost as a result of overweight and obesity range as high as 20.

With regard to quality of life, the effects are even more dramatic, resulting in the equivalent of aging 30 years. With current estimates placing a number of individuals considered overweight or obese at more than 120 million, we are speaking of a problem of great magnitude.

Including direct and indirect costs, obesity has become a major contributor to the rising financial burden of caring for our population, with current estimates ranging up to \$117 billion. We are on pace to exceed the price of tobacco-related medical care

in the next few years. This is also approximately 50 percent of the cost of treating all cancers (direct and indirect).

In 1995 alone, 5.7 percent of the U.S. health expenditure was for individuals with body mass index over 29. From 1996 to 1998, overweight resulted in a 15 percent increase in annual per capita Medicare spending, with a 37 percent increase being associated with obesity. The direct costs of coronary heart disease, non-insulin dependent diabetes mellitus and hypertension attributed to obesity were estimated at \$42.62 billion.

Within the workplace, estimates suggest that \$20–30 billion per year are lost in productivity to lost time due to the increased medical problems linked to obesity. Employees lost 39.3 million workdays in 1994 due to obesity-related medical conditions, representing a 50 percent increase since 1988.

Urgency of Current Problem

At the same time we are fighting to manage the rising costs of healthcare, and to improve the quality of life for our population, we have seen little progress in combating obesity through the national dietary guidelines initially presented nearly 30 years ago. Total caloric intake has risen. Despite relentless admonishment regarding the evils of fat consumption, we have seen only limited success in lowering the percentage of total fat intake, with overall consumption actually increasing.

It is interesting to note that during this period of increased attention to fat reduction, carbohydrate intake has risen sharply. Just as an anecdotal example, Krispy Kreme is currently selling 5 million doughnuts per day, and 2 billion per year. A single store can make and sell anywhere from 3,000 to 12,000 doughnuts per hour, and every two minutes enough doughnuts are made to stack the height of the Empire State Building, and every week enough to reach from New York to Los Angeles.

This increased carbohydrate consumption occurs at a time when scientific studies are showing a clear relationship between carbohydrates and serum triglyceride levels. Elevated triglycerides and its concomitant suppressed HDL represent an independent risk factor for coronary artery disease. Additionally, the identification of what we call “Metabolic Syndrome” further establishes the relationship between obesity and elevated triglycerides. This syndrome is considered an independent cardiac risk factor, equal in importance to and in some cases a precursor for other well established risks, such as diabetes, hypertension, and previous myocardial infarction. The syndrome is present in up to 47 million Americans. Its components include:

- Waist circumference greater than 40 inches (35 inches in women)
- Serum triglyceride level > 150 mg/dL
- HDL < 40 mg/dL in men and 50 mg/dL in women.
- Blood pressure of 130/85 mm Hg or higher
- Fasting glucose level of 110 mg/dL or higher

When looking specifically at cardiac risk factors, despite tremendous gains in understanding the etiology, treatment and prevention of coronary heart disease, we have made only modest gains in preventive risk reduction. Only 3–10 percent of individuals in the United States and Europe currently fall within the guidelines of having low risk profiles, even though reaching these goals would result in a 80–90 percent reduction in coronary events, coronary vascular disease mortality and could increase life span by an estimated six to ten years.

Looking beyond coronary disease, the failure to provide a viable solution to the obesity epidemic has spawned a current level in obesity-related surgical treatment that is currently being performed on approximately 80,000 people per year.

Clearly the challenge to all of us involves:

- Recognizing obesity as a public health issue;
- Realizing that the solution must be safe, effective and practical and may not come in “one size fits all”; and finally
- Remaining open to new approaches supported by emerging research.

A Different Solution

The traditional dietary establishment has recommended nutritional guidelines that have failed to curb the growing epidemic of obesity. Although this is likely the result of a combination of external factors related to lifestyle that impact energy consumption and expenditure, the message of caloric control and fat reduction has not produced the anticipated reduction in the rising rate of obesity that was expected.

Experts agree that the solution is NOT to be found in a particular diet, but rather a modification of lifestyle risk factors for obesity. These would include dietary modifications combined with exercise to reach long-term net health gains.

Atkins represents just this type of intervention, focusing on educating individuals to make intelligent food choices favoring nutrient dense whole foods in a way that includes adequate protein and fat which provides satiety and satisfaction and improves compliance. By shifting attention from calorie counting, portion control, and fat reduction, Atkins teaches individuals how to make better selections while at the same time address other significant health risks through exercise.

Atkins is a personalized approach to identifying a level of carbohydrate consumption that is consistent with achieving ideal body weight that can then be maintained for a lifetime of improved health. Simple, straightforward and safe, controlled carbohydrate nutrition offers a different solution to the challenge of weight reduction and maintenance, and one that can help many people meet their weight management goals.

The scientific evidence supporting controlled carbohydrate nutrition dates back many years, with reports from as early as 1972 (Young *et al.*, *J. Clinical Nutrition*) demonstrating that lowering carbohydrate consumption significantly reduces body fat even when calories are maintained equal (1,800).

Even in adolescents fed more calories (1,100 vs. 1,830), work by Sondike has demonstrated that more weight is lost with low carbohydrate intake as compared with low calorie/low fat approaches. More recently studies completed at Duke University under the direction of Dr. Eric Westman confirmed greater weight loss at six months with a low carbohydrate program, approximately twice that seen with a traditional low fat approach (30 versus 18 lbs). Work supported by the American Heart Association and performed by Bonnie Brehm, MD, looking at 53 obese women showed that more weight (8.5 ± 1.0 vs. 3.9 ± 1.0 kg; $p < 0.01$) and more body fat (4.8 ± 0.67 vs. 2.0 ± 0.75 kg; $p < 0.01$) were lost on a low carbohydrate diet than on a low fat/low calorie program. Insulin and glucose levels also improved on Atkins, diminishing the risks of developing diabetes.

There have recently been several articles published in the *New England Journal of Medicine* (Foster *et al.*) as well as the *Journal of the American Medical Association* (Stern *et al.*) that have examined the safety and efficacy of the controlled carbohydrate nutritional approach. These studies have shown that by limiting carbohydrates, individuals demonstrate equal or greater weight loss (statistically significant through the first six months) than that seen with traditional recommendations, without any clinical evidence of increased cardiovascular or metabolic risk identified. These studies contain follow-up through 12 months, and in at least one case, in a multi-center study funded by the NIH, individuals are being followed prospectively for a total of two years.

Within these studies, laboratory analysis of established serum risk factors for coronary artery disease demonstrate consistent reduction of triglyceride levels, as well as improvement in the HDL (good cholesterol) without significant increase observed of either total or LDL cholesterol. In Dr. Westman's work at Duke University, an eight-fold improvement in the TG/HDL ratio was recorded. A separate study completed by Dr. Jeff Volek has demonstrated that for individuals followed on a controlled carbohydrate nutritional program, post-prandial lipemia, as measured as circulating TAG, is actually seen to decrease, as well as fasting TAG. These are both important measures of coronary heart disease. Studies have also demonstrated a reduction in measures of inflammation recently hypothesized to play an important role in the development of coronary artery disease—as measurement by levels of C-reactive protein (O'Brien *et al.* and Volek *et al.*).

Mechanism of Action

The principals of this approach involve modifying the metabolic pathways in which energy is used to encourage the oxidation of stored fat for fuel, while at the same time minimize the storage of excess calories within the body as fat. These goals are achieved with the Atkins Nutritional Approach by limiting carbohydrate intake, through a four phase program. This program is designed to help individuals effectively manage carbohydrate cravings initially and to maximize long term success through the transition to a lifetime strategy that involves reintroducing nutrient dense whole foods with complex carbohydrates to identify a personalized carbohydrate threshold.

From a physiologic perspective, controlled carbohydrate nutrition relies on the lipolysis or breakdown of stored fat for fuel. Although this pathway is ordinarily a secondary method of providing energy, by limiting the availability of carbohydrates it can readily become the primary mechanism and in doing this, has been shown to result in improved energy levels, elevated mood, as well as lessened cravings,

heartburn, and premenstrual symptoms (Westman). This is all while allowing people to consume satisfying good tasting food in ample portions and lose weight.

Inherent in the conversion and support of this metabolic pathway for long term maintenance, and the reintroduction of healthy carbohydrates into the diet is an understanding of recent science that has demonstrated that when it comes to impacting blood sugar (glucose) levels, not all carbohydrates are created equally. Specifically, it is the amount and rate of rise in blood sugar levels that is important here, concepts referred to glycemic index (GI) and glycemic load (product of GI X total grams).

Because not all carbohydrates are digested, (*i.e.*, fiber), their impact on blood sugar levels is lessened. Similarly there are certain other carbohydrates, like sugar alcohols that do not raise blood sugar levels and therefore provide taste and flavor to foods. These do not result in the insulin spikes that occur when other blood sugar raising carbohydrates are consumed. Since insulin interferes with the breakdown of fat, and also is involved with the storage of excess calories as body fat, the minimization of the modulation of this hormone through dietary choices plays a key role in controlled carbohydrate nutrition.

Several investigators have suggested that the apparent metabolic advantage that has been demonstrated in studies, (*i.e.*, Sondike *et al.*) that show individuals can lose more weight while consuming a greater total amount of calories when carbohydrates are limited have suggested this may be related to the increased metabolic demands associated with the macronutrient breakdown and resynthesis of glucose through the process of gluconeogenesis (formation of new glucose) that takes place when carbohydrates are limited. Others have suggested that the presence of ketones, or components of the diet itself may increase satiety and help reduce total caloric consumption. Regardless of the mechanism, there has been sufficient evidence to demonstrate the weight loss, and predominantly body fat loss does occur while following a controlled carbohydrate program, even without caloric restriction.

The Popularity of Controlled Carbohydrate Nutrition

It is difficult to determine if the current popularity of controlled carbohydrate nutrition stems from the realization, that as explained by Walter Willett of the Harvard School of Public Health “mainstream nutritional science has demonized dietary fat, yet 50 years and hundreds of millions of dollars of research have failed to prove that eating a low fat diet will help you live longer.” It could be that three decades of a national campaign to reduce fat intake has done nothing to combat the rise of obesity in this country (CDC/NCHS).

Clearly there is no sound nutritional reason for U.S. sweetener consumption to have increased to 22 million tons in 1999 from only 12.2 million in 1980, and high fructose corn syrup consumption to have quadrupled to 9.2 million tons from 1980 to 1999. Looking at this another way, moving toward a nutritional strategy that focuses on reducing simple sugars—estimated by Michael Waldholz from the *Wall Street Journal* to have (on a per capita basis) increased by 28 lbs or 22 percent from 1970 to 1995—clearly has much to offer. Regardless of the cause, an approach must be outlined and implemented to address the finding by Waldholz that sugar and sweeteners represented 36 percent to 40 percent of the U.S. consumption of carbohydrates.

In light of the emerging science that supports the safety and efficacy of controlled carbohydrate nutrition, recognizing the reasons why, by some estimates, 35 million Americans are currently following this strategy is extremely important. It may also offer a significant clue in solving this country's obesity problems. With enthusiasm for weight loss and improved health through nutrition rekindled, it is time to work together to build rather than destroy. At the very least, we need to recognize that our population is not satisfied with the dietary recommendations they have been given.

Counting carbohydrates is quite simply easier for many people than eating smaller amounts of less satiating foods. This empowerment serves as a cornerstone of controlled carbohydrate nutrition, and fosters a renewed interest in making educated food choices that many find extremely gratifying. This is especially true for the many who have been unsuccessfully managing their weight through standard recommendations, who now feel able to take control, and to improve their health by managing their carbohydrates . . . in contrast to struggling with portion control and unsatisfying cuisine.

We are in a unique situation, having learned much from well controlled research studies that have identified actual health benefits rather than risks associated with following the controlled carbohydrate nutritional strategy. We have also seen a growing number of people show renewed interest in how what they eat impacts their health. If providing unrealistic goals has led to apathy, and non-specific rec-

ommendations have led to misinterpretation, the time is right to rely on evidence based in science to develop strategies to effectively have an impact on this crisis.

The Role of the Government

As the science in support of controlled carbohydrate diets continues to mount, it is important for the all the policymakers involved in revisiting the national dietary guidelines not to ignore this evidence

Any revision of the guidelines should incorporate some of the Atkins Nutritional Principles such as:

- Consuming adequate protein (at least 30 to 35 percent of total calories) to provide satiety and increased thermogenesis
- Incorporating a balance of untreated fats in adequate amounts to provide satiety and meet nutritional needs
- Teaching carbohydrate awareness so that Americans learn to respect and understand which carbs are the most nutrient dense and which are high or low glycemic index.

If more research is needed, let's fund it. It's hard for me to imagine any other public health crisis more important than those I've outlined for you today.

Senator FITZGERALD. Thank you. Those were all very good introductory statements. And as best I can, I want to stay away from the battle between the diets here. I know we have some prominent dietitians here, but I do think there are some areas of agreement.

Although I guess I would characterize Atkins as trying to limit total carbs, whether complex or simple, you would want to limit carbs. And you wouldn't discourage the consumption of fats to the extent that the low fat diets would certainly. You don't discourage beef consumption.

Dr. Ornish would be more likely to examine what kind of carbs you are looking at. You'd want to promote what you call complex carbohydrates and eliminate the simple carbohydrates. And you would distinguish as well between the fats, between the good and bad fats.

And I think, Dr. Willett, you are along those same lines. Notwithstanding those differences, I would think that all of you would be concerned about the level of carbohydrates that are recommended by that food chart. Clearly, it's a problem that they don't distinguish between highly refined carbohydrates and whole-grain carbohydrates.

Assume that some American citizen is following that, and this citizen just happens to like white bread. And they have six to eleven servings of white bread, six to eleven servings of white bread, cereal, white pasta, white rice. What kind of effect on one's blood sugar is that likely to have, any of you?

Dr. ORNISH. Let me respond to that. First of all, you are right that there is a big difference between simple and complex carbs. And I think all of us agree on that. It's probably worth just highlighting what we all agree on.

I think we all agree that Americans eat way too many simple carbs. And I think we all agree that the food pyramid needs to be revised. And I want to salute Dr. Willett for his primary advocacy in that area. I think it's fantastic.

And I think we agree pretty much with just some minor differences on how that should be. But I do think that complex carbohydrates should remain the mainstay of most Americans diet. Because in fact studies that Dr. Willett and his colleagues have done have shown that if you divide people into quintiles from the high

complex carbohydrate and comparing the lowest simple carb, that people live longer, that they do better, and so, as opposed to going to high animal protein foods which really do create problems.

We found, you know, we have long-term randomized control trial data showing that people lose more weight, and it only makes sense if you are, if we all agree that simple carbs cause people to gain weight, and if fat has nine calories per gram versus four for protein and carbs, the goal is to limit the intake of both.

Because the simple carbs we've already talked about. And by eating less fat, you are eating fewer calories without having to eat less food. So you don't have the hunger.

And we did find out that the LDL cholesterol went down by 40 percent, far more than occurs on either an Atkins diet or the American Heart Association. So the studies that have been coming out are really comparing two diets that I think are fairly ineffective, as opposed to comparing—and the problem is that the headline reads, "Low fat diets are not effective," when the diet they are comparing it to is not really very low in fat and tends to be high in simple carbs.

Senator FITZGERALD. Dr. Willett?

Dr. WILLETT. Thanks. I think there is a lot in common here. And the amount of carbohydrate there is very high. But I think there is a problem in terminology.

First of all, it's simple carbohydrates, or complex carbohydrates really include all starches. So Wonder Bread and white pasta and white rice really are complex carbohydrates. And we need better clarification. What we are really talking about is whole wheat—

Senator FITZGERALD. So what are you encouraging? What type of carbohydrates are you encouraging the consumption of?

Dr. WILLETT. Whole grain, minimally refined carbohydrates, particularly—

Dr. ORNISH. This we agree on.

Senator FITZGERALD. So you would call them whole grain, minimally refined carbohydrates. Those are okay. But do those carbohydrates get converted into sugar just like simple sugar but maybe at a slower rate?

Dr. WILLETT. They do, at a slower rate. But I think the point has been made earlier that they do come along with other micronutrients, minerals and vitamins that do seem to have positive health benefits. So from what we are seeing is that there is a positive health benefit of having some whole grain, high fiber carbohydrates in the diet.

But in fact, what we have looked at is up to three or four servings a day, and servings roughly quantified, we see benefit. I think if you really tried to consume 50 or 60 grams of carbohydrates as really whole grains, in fact most people can't tolerate that. Because there would be so much fiber, abdominal pains and things like that.

So, in reality I think a moderate carbohydrate diet, I think it is appropriate—

Senator FITZGERALD. But you really suggested that the refined carbohydrates in the white bread should almost be classified up with the—

Dr. WILLETT. Sugar.

Senator FITZGERALD. Sugars——

Dr. WILLETT. Absolutely.

Dr. ORNISH. I agree with that.

Senator FITZGERALD.—should be used very sparingly, so that they have the refined carbohydrates on the wrong end of the food pyramid.

Dr. WILLETT. Exactly. They have really negative health effects in terms of what they do to risk of diabetes and heart disease. In fact, there are pretty strong predictors of diabetes——

Senator FITZGERALD. Some of them are like eating table sugar, is that correct, according to your article in *Scientific America*?

Dr. WILLETT. That's right. And metabolically, that's what they do too in terms of the changes in triglycerides reductions and HDL and high insulin levels.

Senator FITZGERALD. Let's be blunt then. If the food chart is encouraging the consumption of the equivalent of table sugars at the bottom, that's a problem; isn't it?

Dr. WILLETT. That's a severe problem. I see this when I look out in the real world at what people are actually given within the weight program. It's large amounts of very high glycemic carbohydrates. And many healthy foods are not allowed because they are too high in fat according to their guidelines.

I also almost had to cry, I was at the Indian community in Oklahoma a few weeks ago and looked at what the Department of Agriculture was feeding those people. It was large amounts of refined starches. In fact, the USDA guidelines said because these Native Americans have high rates of diabetes and heart disease, we provided them with high carbohydrate diets.

And it was almost entirely high-refined starches. Indians of course developed——

Senator FITZGERALD. Can you give an example of those highly refined starches?

Dr. WILLETT. Well, the one that really makes you want to cry is that of course Indians developed corn. And that was one of their staples. And it was a corn that was before hybrid corn, small kernels, more oils, more minerals. And that's what they ate.

What they had, the Department of Agriculture commodity warehouse there was it was degerminated maize flour, which means it's pure powdered starch. And that is exactly what causes diabetes, one strong contributing factor to diabetes.

Senator FITZGERALD. It's just like eating table sugar. Isn't that it?

Dr. WILLETT. It's worse, actually.

Senator FITZGERALD. It's worse.

Dr. WILLETT. It's worse.

Senator FITZGERALD. It's higher on the glycemic index, I think you said, than table sugar.

Dr. WILLETT. That's right. It's worse than table sugar.

Senator FITZGERALD. Now, what about potatoes? You talked about potatoes in your article too. And I think you said that white bread is 100 on a glycemic index. And as I recall, you said a boiled potato was 123.

Dr. WILLETT. Right. It's really in the same ballpark. And it's basically because the carbohydrate is very rapidly broken down into

sugar and absorbed as glucose. So potatoes, and interestingly, my grandparents survived the depression on potatoes; and there's a lot of cultural attachment to potatoes.

They were better tolerated when we were a society that was highly physically active and we worked on farms for 8, 10 hours a day. But none of us, even those of us who run three miles a day, are anywhere near that physically active.

Therefore, we have higher insulin resistance and less well tolerate that high glycemic load. So it is a real problem that the Department of Agriculture puts potatoes there as a vegetable. And so—

Senator FITZGERALD. Right. And that's the next rung up, right? They are encouraging three to five servings of that a day.

Dr. WILLETT. Right. So it's not just the 11 servings a day of starch. It's up to 13 or so.

Senator FITZGERALD. And let's get this straight. Eating a boiled potato is worse than eating table sugar, right?

Dr. WILLETT. It's basically in the same category. Metabolically, it will be worse.

Senator FITZGERALD. So that really could have a relation to all the diabetes that's out there.

Dr. WILLETT. Yes.

Senator FITZGERALD. And the insulin resistance and the obesity. Dr. Ornish?

Dr. ORNISH. I agree with what Dr. Willett is saying, but I think it's worth pointing out that instead of only looking at foods in isolation, if you are eating a potato along with some broccoli and vegetables and other high fiber, whole wheat bread and so on, it's really the glycemic index of a meal that you are eating, rather than just a specific food that you need to look at.

Senator FITZGERALD. So that the absorption rate of the potatoes will be slowed.

Dr. ORNISH. It will be influenced by the other foods that you are eating. So it's not that you should never eat potatoes, I don't think, because, you know, the people in our studies were eating potatoes.

Senator FITZGERALD. But its absorption will be slowed, but will it not eventually be made into fat if you are not active enough to burn up that energy?

Dr. ORNISH. Well, that's true of any food. If you are eating more calories than you are burning up, you will gain weight, but not limited to potatoes per se.

Senator FITZGERALD. Well, this raises a question about the whole grains that all of you agree are good. You may absorb them more slowly into your blood, and they may be lower on a glycemic basis, but aren't they eventually, if you are not doing enough exercise, aren't they eventually going to be converted into fats even if they are from carbohydrates from whole grains?

Dr. ORNISH. Well, that's true of any foods. If you eat more than you are burning up, you are going to convert it to fat. The nice thing about whole grains is not only do you absorb them more slowly so you don't get the insulin surges which do accelerate the conversion of calories, particularly of triglycerides, but they fill you up before you get too many calories.

You can consume virtually unlimited amounts of sugar without getting full. A can of soft drink has 12 to 14 teaspoons of sugar. But you can only eat so many apples or so many pieces of whole wheat bread. You are going to get full before you get too many calories.

So you really get a double benefit. You get full before you get too many calories, and you absorb those foods more slowly so you don't get the insulin surge. And the other thing that happens is a little like a pendulum. When your blood sugar goes way up, it doesn't come down to where it stops. It goes down below where it started. So you get the low blood sugar which creates these cravings for more carbohydrates.

I want to emphasize also, just to clarify, that in our studies showing reversal of heart disease or equivalents of prostate cancer, it is a very extremely low fat, 10 percent fat diet. Because that's what it takes when you are trying to reverse disease. The more moderate recommendations don't go far enough even to keep it from progressing.

But if we are just talking about losing weight or feeling better or preventing disease, we have a spectrum of choices. It's not all or nothing. But to the degree that you eat fewer simple carbs and more complex, maybe I think your term probably is a better one, more less unrefined foods, you are going to lose weight; you are going to feel better; you are going to gain health.

Senator FITZGERALD. Dr. Trager, do you want to stick up for the Atkins Institute?

Dr. TRAGER. Sure. There's actually no reason to stick up. What you have described is the maintenance phase of the Atkins nutritional approach for people who are not opposed to eating animal protein.

Basically people can follow the Atkins approach as lifetime maintenance. And one of the biggest misconceptions about what Atkins is all about, what Atkins is about is controlling carbohydrates. Choosing that level where your weight is maintained once you get to the maintenance level, the lifetime strategy.

It's about just what you described, choosing the nutrient dense, whole foods, the complex carbohydrates, vegetables and protein in an amount that makes you full, that takes away hunger and allows you to go on and live your life in a way that's not about fighting portion control; in a way that has not led people to run away from our dietary recommendations.

Senator FITZGERALD. You kind of reverse this food pyramid, don't you?

Dr. TRAGER. I think it's putting the emphasis, taking the emphasis away from carbohydrates as the main source of energy and realizing that protein and fats have health benefits as well.

And when you take away the simple carbohydrates we've been talking about, you have to use something in exchange. Some of it can be complex carbohydrates, but it can be also be protein and some fats, as we've seen from these studies where risk factors have not in any way worsened.

So we have to remember that the largest study that's been done is the 30-year-trial we've seen the American public go through where they've seen—

Senator FITZGERALD. What study is that?

Dr. TRAGER. I'm talking the study of the American people, where we've given them recommendations and they haven't followed them. And obesity has risen. And diabetes has risen.

And people don't want to or are unable to follow even the recommendations to limit fat as seen in that pyramid. So this reduction of fat that we've talked about that's very useful in some individuals with this heart disease, is so difficult for many people to follow, that what happens is what we are seeing right now.

People are eating more calories, and they are eating more fat as part of that. They are not getting filled up with the food. And this emphasis on eating low fat food that's not filling, has led to replacement with more and more carbohydrates.

So if we do nothing and if we tell people to lower their fat, we see what's happening. People are struggling with that dietary advice. And making it more stringent and telling them even more specifically, is going to leave some people out.

There's no one-size-fits-all solution to weight management for our country.

Senator FITZGERALD. Let Mr. Jacobson have a crack at it here.

Mr. JACOBSON. I would like to put this issue aside.

Senator FITZGERALD. Can I ask a question. Is the NIH doing a study now of which diet is the best? Dr. Willett, did you mention an NIH study?

Dr. WILLETT. Well, there are several studies that are being funded. And of course it's not—there are so many different comparisons you can make, so many different levels of fat and combinations with carbohydrate, and of course combinations with physical activity.

But several large studies have been started or are about to be started, which is really good. These are things we should have done about 20 years ago. But there is clearly reason for—

Senator FITZGERALD. When did they start them, very recently?

Dr. WILLETT. Well, the big ones that I know are just about to receive funding. They actually haven't started yet. And, interestingly, these studies are not hugely expensive compared to the long-term trials of heart disease prevention which require tens of thousands of people for many years.

For, you know, one or two hundred people followed for 2 years, you can actually derive a huge amount of information. So these are only modestly expensive studies. And we need to do more, because a lot of the debate has been just simply because we haven't had good data.

These are resolvable questions. Also, I think the point was made that one size does not fit all. That someone who's lean and active can tolerate a diet, a different kind of diet than someone who is more sedentary or perhaps has some genetic insulin resistance.

So a number of studies need to be done. Some are started, but we need to do more studies in this area.

Senator FITZGERALD. Mr. Jacobson?

Mr. JACOBSON. Well, I think the nutrition arguments are going to be fought out at the Dietary Guidelines Committee meeting over the next year or so. I think what your Committee can focus on is

the process and then the implementation of whatever these wise people recommend to the American public.

In terms of process, you are suggesting having HHS take over this issue of—largely from USDA. And I'm not sure that's the best fit. At times, USDA has been better than HHS.

USDA came up with recommended limits on sugar intake, refined sugar intake 10 years ago, saying the average person should consume no more than ten teaspoons a day. HHS has never come to that point.

In the battle over trans fat, people at NIH were resisting putting trans fat on food labels for years. The bias or the conflict of interest at HHS is there's never enough science.

An alternative to either agency would be to have the National Academy of Sciences take over the *Dietary Guidelines* and come up with a recommendation every 5 years, the way it comes up with other recommendations. It may be a way to insulate the Committee from these industrial pressures at USDA and from some of the intellectual biases at HHS.

So the process is one thing to consider. And of course conflicts of interest of committee members. The second thing is implementation. You know, it probably wouldn't matter if these guidelines said we should all eat Limburger cheese on white bread with anchovies. People are not going to follow it. They never hear of these things.

The government programs to implement these are negligible. Meanwhile, industry is spending billions of dollars encouraging kids to eat candy, sugary candies for breakfast, and McDonald's french fries.

Senator FITZGERALD. But after the Food Guidelines, the pyramid was promulgated in 1992. Didn't we then see a sudden surge in the food companies taking their cue from the food pyramid, offering low fat foods; and in some cases they stripped the fat out, but to maintain the taste they added a lot of sugar.

Mr. JACOBSON. Well, no, no, no. The food nutrition labeling came in in 1993. And that was the big driver for the lower fat foods. The FDA came up with definitions for low fat, reduced calories, and so on.

The pyramid didn't have anything to do with it at all. And actually, and when the lower fat foods came out—

Senator FITZGERALD. But on some foods you'll see at the store they'll have the food pyramid printed right on the label.

Mr. JACOBSON. And it says, Registered U.S. Department of Agriculture also. I mean, Pennsylvania Department of Agriculture. I don't think anybody reads it. It's—

Senator FITZGERALD. Well, the food industry, those who feel they benefit by the food pyramid, will spend a lot of money advertising their place on the food pyramid. That's my perception.

Mr. JACOBSON. They spend very little money advertising anything along those lines. They put, some of the companies put the triangle on their packages. But if you think it has an effect, I think otherwise.

I think this committee should think about the ways that the pyramid or the *Dietary Guidelines* can be implemented. You know, calories, everybody thinks, I think everybody thinks calories are im-

portant. Is there calorie information when you go to a restaurant, when you buy meat, when you buy a bottle of—can of beer? No.

Government could require calorie information in those places. You turn on television. Are your kids going to see ads to eat carrots or french fries. The answer is obvious.

The junk food served in schools, 98 percent of high schools have junk food vending machines according to Centers for Disease Control. Government could intervene in an area like that.

That's what I think this committee ought to think about. And I hope you and others will think about the legislation that could move us forward based on the current *Dietary Guidelines for Americans* or the next version. But there's a lot of room for some action.

But it seems like people in Washington wring their hands over this obesity problem, and then they find out they are going to have to step on some toes or spend some money, and all of a sudden, they have disappeared.

Senator FITZGERALD. Dr. Ornish or Dr. Willett?

Dr. ORNISH. I think one of the reasons that Dr. Willett has put so much energy into the food pyramid and has played such an important leadership role is that it does matter. And I think it matters for a number of reasons.

I used to think if we just did good research, that would change medical practice and how people eat. And I think research is important, but it's also important to work with the food companies because they are in the behavioral modification business as well. But, at least until recently, they haven't always used that to the advantage of the American people.

I've consulted directly with McDonald's, with ConAgra, and most recently with Pepsico. and I've been particularly impressed with what Pepsico has been doing. Pepsico as you know includes Tropicana, Quaker Oats, Aquafina, as well as Frito Lay and some of the other products.

And I think a combination, a lot of these food companies are concerned both about not becoming the next big tobacco. They are concerned about litigation. And here again the kinds of guidelines the Federal Government sets help influence what they do, in part because of their concerns about litigation, but also because they see there's a great market opportunity.

If you look at the areas of the growth in the food industry, they have been in organic foods, they have been in the kinds of unrefined foods that Dr. Willett mentioned. And so I think that the combination of the concern about litigation and the opportunity to do something beneficial, many of these companies are rather than taking, say, the vending machines out of school, are stocking them with healthy products.

And I think those kinds of private partnerships should be encouraged. And then, if that doesn't work, then consider a regulation. But I think that the environment and the atmosphere is very different now than it was even 5 years ago.

Senator FITZGERALD. Dr. Willett.

Dr. WILLETT. I agree with both Dr. Jacobson and Dr. Ornish because, I think as you said in your introduction, the Food Guidelines and the food pyramid are really very important, both because of

educational impact, and we have seen a major change in the U.S.—

Senator FITZGERALD. In how it affects the WIC Program and the school lunch program.

Dr. WILLETT. Right.

Senator FITZGERALD. All of those are influenced by the food pyramid.

Dr. WILLETT. Absolutely. And I'm very saddened that I see what those kids and mothers are being fed, because they are very high glycemic diets in general. So this is important to get right.

And, also, Americans have made changes in their diet. And unfortunately they have not been such good ones, but they were sort of what they were being told.

They did increase the intake of carbohydrates, and the percentage of calories and fat went down. So these do have an impact. It's just that they have been off target.

And I think it's an indication of people want this information and they will act upon it, not everybody, not right away. But I also do agree with Dr. Jacobson that this is of course only part of the answer. And there are lots of other things that can be done as well.

I think everyone here would agree that we can't continue to subject our kids to this barrage of very carefully crafted, aggressive advertising to eat junk food, that that's one example where we can put some limits on. And from surveys our school have done, very high percentage of the public supports that.

They don't support limitations on advertising for adults, but protecting children is something that is very much supported politically. And second, I think everything that has a label or comes in a container can have calories on it. There's actually no additional costs of doing that.

But there's no reason that everything you get at McDonald's or Burger King, or maybe Pepsico will do it voluntarily. There's no reason that that shouldn't contain caloric content.

Senator FITZGERALD. Dr. Jacobson pointed out that the USDA has been ahead of the HHS in some respects. But I have questions about the USDA being our general in the war on obesity.

We've been in this war for about 30 years, and we are getting more obese. We are not winning the war. And I think after a certain point, you have got to make the kind of decision Lincoln made in the Civil War, that he was going to bring in General Grant.

I think we need a new general in this war. And I think that it certainly, industry pressure groups can influence any part of the Federal Government. Certainly they can influence the HHS almost as readily as they could the USDA.

But you'd start out at least with more of an orientation toward pure science, I think. And less coziness with the farm groups and the food companies at the HHS. And they have the National Institute of Health.

And while defenses could be launched for the USDA, I do see it primarily as a department that is there to promote sales on behalf of American farmers. And they do a pretty good job at that.

And so I want to ask Dr. Trager, Dr. Willett and Dr. Ornish about their thoughts of moving the responsibility for the Food Guidelines to the HHS or to a different agency.

Dr. TRAGER. I think the biggest and most important goal is that we recognize evidence based science and we leave some of the pre-conceived ideas about nutrition behind, and start looking at what we are learning now; recognizing as those we heard in the first panel, nutrition is a science and is moving rapidly forward, our knowledge, the research that's coming out.

And I think the biggest and most important goal is to have the recommendations reflect what we are seeing as different options for people. If the recommendation is to not rule out or limit the large number of people who can be helped from a policy that's different from that which we've seen.

Dr. WILLETT. There's no solution that's perfect, of course, simply because our institutions are made of humans and we are all not perfect and subjected to our biases and external pressures.

But I do think HHS taking the lead would be an advantage. I think it's also worth seriously considering Dr. Jacobson's idea of perhaps the National Academy of Science Institute of Medicine as an alternative as well.

There may be a bit more insulation there. And certainly the Food Nutrition Board is heavily involved in these issues and essentially creates the RDAs. I think that same mechanism could be used here. So it would be a better move, I think.

Senator FITZGERALD. The food groups would probably never allow that bill to pass. That's if you want my—because then you would really take it out of the government. Dr. Ornish, do you have any thoughts?

Dr. ORNISH. No. I agree with Dr. Willett.

Senator FITZGERALD. OK. This, actually, and I'm really getting close to wrapping up. But when I first came to the Senate, I was surprised to realize Illinois, my state, is one of the only states in the country that has a mandatory physical education requirement for students in high school.

And there was discussion, at the time of the Colombine shooting in Colombine, Colorado, there was some discussion of mandating physical education for all kids in our public high schools across the country. I don't think any state besides Illinois has a mandatory PE requirement for their kids in their high school.

And I know Secretary Thompson at HHS has said that it's time to get children, ladies and gentlemen, off the couch and onto the playground. He noted that just 6 percent of schools require physical education for high school seniors, and that he was concerned that cutbacks in physical education classes, the rise in labor saving devices, and the prevalence of television, video games and computers has reduced the amount of time that most Americans spend exercising each day.

I assume all of you agree with that, that we have to have more exercise. We have to burn more calories. And we are getting to the stage where we are burning up fewer and fewer calories with our more and more sedentary lifestyle. Dr. Ornish?

Dr. ORNISH. Yes, I actually put that in my written testimony, because I think it's terribly important. Of all the things to cut back on, that seems to be the most shortsighted.

And studies are showing that not only does physical exercise in high school help people reduce obesity, just as one statistic, diabe-

tes in teenagers has gone up 70 percent in the last 10 years. And with all the ravages of diabetes that Dr. Willett alluded to earlier, the eye and nerve, kidney, heart disease damage, this may be one of the first generation that lives a shorter lifespan than our parents.

But also studies have shown that when students exercise, their academic performance improves. It actually improves in direct proportion to how much they exercise. So we've talked a lot about diet, but let's not lose sight of the exercise part as well. And that's something that I think we would all agree on.

Dr. WILLETT. I completely agree with that. And the point here is that this is going to cost money. And this whole idea that we have to have programs that are cost neutral when we do not have a cost neutral health care system, where costs are going up astronomically for treatment, and we are not willing to put money into the basic prevention that would have enormous health benefits, is very, very shortsighted.

It is interesting that essentially in the northeast all the elite private schools have an hour a day of physical activity. I think that's what all kids really deserve. And we are just going to have to say this is something that, yes, we have to add an hour to the day. We can't shortchange academics, but this is a basic value.

And somehow the fact that we are the richest country in the world and we say we can't afford it, is really hard to understand what's happened to our priorities.

Senator FITZGERALD. That's why your food pyramid that you published in Scientific American had exercise at the base of the pyramid, I suppose.

Dr. WILLETT. Absolutely.

Senator FITZGERALD. And Dr. Trager, I guess you run marathons.

Dr. TRAGER. I clearly am a big proponent of exercise. I think that teaching children early instills this value, clearly realize that any weight loss or weight management program in which exercise is a part has a greater chance of long-term success.

I think it's also important, though, to disconnect exercise from weight loss, and to realize that exercise has other health benefits; cardiovascular wellness for one, independent of any weight loss, so that people don't just exercise to lose weight; they exercise for good health.

Senator FITZGERALD. Dr. Willett, one final question. I know that some of your research articles urge caution on consuming red meat because of the saturated fat content. But I'm told that you advocate the consumption of poultry. And isn't it true that some types of poultry such as the thigh on a chicken can contain more saturated fat than a lean cut of beef?

Dr. WILLETT. Well, you could make some comparisons, but actually the fat in poultry is much more unsaturated than the fat in beef fat, so that—

Senator FITZGERALD. So the fat in poultry is much more saturated?

Dr. WILLETT. Much more unsaturated.

Senator FITZGERALD. Much more unsaturated.

Dr. WILLETT. Yes. So the fat is less saturated. It's actually not a terribly bad balance of fat in poultry fat. So, in moderation, that is going to be better than fat in beef fat.

So it's, again, there is—the issue is more than of course just blood lipids here, that there's quite a bit of evidence, many studies showing increased risk of colon cancer and prostate cancer in high red meat consumption. And it's not clear that it's just the fat per se, so that's part of the rationale.

Senator FITZGERALD. Dr. Trager, would you have any—

Dr. TRAGER. I'd argue that some of that research is still unclear, whether or not it's the way the food is prepared, the charring of the meat for instance with the red meat is one issue.

It's also very important to realize that one of the greatest risks for cancer, be it colon or prostate, is obesity. And in managing obesity and giving a people a tool they can use that works for them in the real world to fight obesity, again, the enemy from the beginning here, lowers the risk of cancer and many of these other health problems.

It's also important to recognize that when carbohydrates are limited or restricted, the effects of saturated fat and not—the negative effects have not been demonstrated. These are all in studies, including the one from Dr. Ornish showed, from Dr. Fleming, looking at the heart, where they looked at a high-fat versus a low-fat diet, not a controlled carbohydrate diet.

Senator FITZGERALD. Dr. Ornish?

Dr. ORNISH. Well, I think that, I agree with Dr. Trager that we should take an evidence-based approach. But Dr. Willett has conducted some pioneering studies, as have many, many others, showing that red meat is associated with breast, prostate, colon, cancer, heart disease, and any of a number of illnesses.

And so I think it's important to highlight where we agree in terms of reducing the intake of refined carbohydrates in particular. But to me they should be—or if you are not going to eat a plant-based diet, eat fish, because fish gives you the protein. It also gives you the protective omegas-3 fatty acids, but it doesn't have the disease enhancing substances that are found in—

Senator FITZGERALD. But a lot of fish apparently contain mercury.

Dr. ORNISH. Well, that's a problem. I agree with that. So that's why I think eating a plant-based diet is even better. And take three grams a day of fish oil but without the mercury and the PVCs; that I think is an optimal diet. But recognizing what's practical, I think you are better off eating the fish.

Senator FITZGERALD. OK. Well, you guys have been wonderful witnesses. We appreciate you all being here and thank you very much for your patience.

And we'll leave the record open to close of business for now, for any other statements to be put in the record. Thank you very much. This meeting is adjourned.

[The meeting was adjourned at 4:43 p.m.]

A P P E N D I X

AMERICAN DIETETIC ASSOCIATION
Chicago, IL, September 30, 2003

Hon. PETER FITZGERALD,
Chairman,
Committee on Commerce, Science, and Transportation,
Consumer Affairs and Product Safety Subcommittee,
United States Senate,
Washington, DC.

Dear Chairman Fitzgerald:

The American Dietetic Association (ADA) commends the Committee for recognizing the importance of nutrition as a national health concern. We ask that our letter be made a part of the official record for the hearing on obesity and how it can be addressed through the *Dietary Guidelines* and *Food Guide Pyramid* revisions.

The ADA is the world's largest food and nutrition professional association. Now 85 years old, ADA is dedicated to serving the public through the promotion of optimal nutritional health and well-being. The work of this Chicago based association and the services of its nearly 70,000 members are based on rigorous academic instruction, supervised practice and continuing education relying on peer-reviewed nutrition research and resources representing significant scientific consensus.

The purpose of the *Dietary Guidelines for Americans* is to provide up-to-date scientific information and advice on how to choose healthful dietary and exercise patterns. It is also to promote healthy food and activity choices among all Americans. These guidelines form the basis for sound decisionmaking by policymakers at all levels of government in the administration of food, nutrition, and health programs. The *Dietary Guidelines for Americans*, however, are also significant for their impact on the American consumer. In today's increasingly complex and confusing food environment people want basic, useable information derived from rigorous science and broad, objective analysis.

Because nutrition is a complex and dynamic field that requires constant vigilance in order to stay up to date with the best science available, the Dietary Guidelines Advisory Committee has a huge assignment. We are confident that this diverse and experienced panel of experts qualified to review emerging science, will evaluate the strength of the evidence, and advise on guideline revisions accordingly. We have no doubt that they will make recommendations for change in the guidelines as appropriate.

As a tool for the work ahead, ADA has recommended the evidence should be systematically analyzed and graded to bring the best information to the forefront for review. Adopting a transparent evidence grading process may remove some of the concerns that have been expressed by those who monitor the work of the Dietary Guidelines Advisory Committee. ADA recommends the integration of their work in a graphic that consumers may use to make healthful choices in diet and exercise.

The ADA strives to communicate healthful eating messages to the public that emphasize the total diet, or overall pattern of foods eaten, rather than any one food or meal. If consumed in moderation with appropriate portion sizes and combined with regular physical activity, all foods can fit into a healthful diet.

The *Dietary Guidelines for Americans* and the USDA *Food Guide Pyramid* along with other policies such as *Reference Dietary Intakes*, *Nutrition Labeling*, and *Healthy People 2010* are all supportive of the total diet approach. The *Dietary Guidelines for Americans* recommend moderation for certain dietary components such as total fat and sugars while emphasizing nutrient adequacy. Unfortunately, most Americans do not follow the *Dietary Guidelines for Americans*. Most U.S. children exceed total and saturated fat guidelines while getting fewer than recommended servings of vegetables, fruit, and dairy foods.

We suggest a more targeted focus to address the epidemic of overweight and obesity. ADA has identified strategies to address these complex issues, and urge special

focus should fall on children to promote healthy weights through healthful eating practices and daily physical activity.

In addition, we recommend that Federal agencies and insurers designate obesity as a disease. This designation would lead to system changes for reimbursement and include sanctioned insurance coverage of obesity treatment. It would mean that 211 categories of obesity defined under the ICD-9 codes would be covered, not just surgical intervention for the morbidly obese. And critical to the issue of obesity is the allocation of adequate resources. Unless the U.S. Government and private sector entities find ways to pay for research, education, intervention and health care related to overweight and obesity, the outcomes will be predictable—we will not make the necessary progress to have a healthy population in the coming years. Obesity-related conditions will continue to consume a large proportion of dollars spent on health care.

As the work on the *Dietary Guidelines for Americans* continues this year, ADA will continue to:

- Urge that the process associated identify and rely upon formal evidence based review of the strongest science available.
- Focus on how consumers will perceive and use the guidelines themselves. The final document should reinforce the importance of the total diet or overall eating pattern and not single out specific foods.
- Stress the need for consistent information to help consumers understand portions and serving sizes.
- Recommend that this version of the Dietary Guidelines for Americans be consumer tested with consumer groups.

ADA believes that Federal agencies relying on the work of the Dietary Guidelines Advisory Committee can present the best science available and deliver a message that is clear and practical for consumers. The differing perspectives of USDA and OHHS should not matter. These two agencies will come together in one voice to deliver a clear message on nutrition priorities in the form of the Dietary Guidelines For Americans.

Sincerely,

MARIANNE SMITH EDGE, MS, RD, LD, FADA,
President.

STATE OF CONNECTICUT—DEPARTMENT OF SOCIAL SERVICES
Hartford, CT, November 3, 2003

Consumer Affairs and Product Safety Subcommittee,
Committee on Commerce, Science, and Transportation,
United States Senate,
Washington, DC.

Dear Honorable Senators:

Below are my comments with respect to revising the *U.S. Dietary Guidelines* and *Food Guide Pyramid*. The existing Guidelines and Pyramid are very good from a public health perspective and should not be scrapped. They need only a few modifications:

1. A section should be added to the *Dietary Guidelines* on food preparation including how to preserve flavor and nutritional value. Another section could discuss how to enjoy a meal. See the *10 Guidelines of the German Nutrition Society (DGE) for a Wholesome Diet*. They are very good.
2. The whole grain recommendation should be strengthened: 3 or more servings of whole grains should be stated in the *Food Guide Pyramid's* Bread, Cereal, Rice, and Pasta group. Whole grains promote health, whereas refined breads and cereals generally have a neutral effect except to replace high-fat-food calories.
3. Cooked dry beans and peas, and nuts should be placed entirely in the *Pyramid's* Meat and Beans group. This will reduce confusion and enable the recommendations to be more useful to vegetarians.
4. At least one ounce or equivalent of cooked dry beans, peas or nuts should be eaten daily. This will discourage the consumption of high-saturated fat foods. Cooked dry beans, peas, and nuts are also good sources of protein, dietary fiber and minerals.

5. The breads and cereals recommendation should be eased slightly. Reducing the *Pyramid's* Bread, Cereal Rice and Pasta group servings by one, to 5–10, will keep it more in line with actual consumption and because more carbohydrate will now be provided in the Meat and Beans group due to the greater emphasis on beans, peas and nuts.
6. Calcium fortified soy products should be included with the Milk group.
7. Fruits but not vegetables should be limited because of their high sugar content.
8. The many benefits of breads and cereals are often offset by their high saturated fat, trans fat or sodium content. The *Guidelines* should help consumers to choose brands with lower fat and sodium so that they can eat their required servings of breads and cereals without overdosing.
9. The sodium standard of 2,400 milligrams per day or 1 milligram per kilocalorie should be stated more forcefully. Epidemiological studies fail to show a relationship between sodium and hypertension precisely because education works: Hypertensives know to consume less sodium. Clinical trials have clearly demonstrated a causal relationship between sodium and hypertension.
10. The sugar standard should not be weakened; it should be strengthened. Although sugar restriction may not be as important in preventing diabetes as once thought, there is growing evidence that hyperglycemia leads to tissue necrosis. Eating *empty calories* also replaces needed nutrients.

I have attached a revised Food Guide Pyramid showing the changes. It works nicely. I thank you for this opportunity to comment.

Yours truly,

DOUGLAS R. BUCK, PH.D.,
Public Health Nutritionist.

ATTACHMENTS



State of Connecticut Department of Social Services 10/03

